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ABSTRACT

The report, prepared by the Select Committee on Population of the United States House of Representatives, discusses the consequences of the changing age composition and geographical distribution of the population. The committee recommends that the government needs to anticipate these changes in order to develop a policy in response to the problems caused by these changes. The document is presented in four sections. Section I discusses the changing size of the U.S. population, including the impact of the 1945-1960 baby boom and more recent birth slowdown, the falling mortality rate, and immigration changes. Future size projections are discussed, as are the need to set population goals, and economic consequences of population growth. Section II explores the changing age composition of the nation, considering consequences and policy alternatives related to the growth of women in the labor force, effects of boom and bust birth cycles on education, influx of new workers in the labor force, and investigates geographic redistribution, noting a nonmetropolitan revival, shifts from the Northeast and North Central to the West and South, and future movement possibilities. The causes of population distribution are pointed out, as well as consequences and possible responses for areas losing or gaining population. Section IV focuses on the need to plan for population changes and their consequences, emphasizing current policies and other possibilities, and the need for coordinated data collection and analysis at federal, state, and local levels. (CK)

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DOMESTIC CONSEQUENCES OF
UNITED STATES POPULATION CHANGE

— *Level 2* —
REPORT

PREPARED BY THE

SELECT COMMITTEE ON POPULATION
U.S. HOUSE OF REPRESENTATIVES
NINETY-FIFTH CONGRESS

SECOND SESSION

Serial E

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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(II)

LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES,
SELECT COMMITTEE ON POPULATION,
Washington, D.C.

Hon. THOMAS P. O'NEILL,
Speaker, U.S. House of Representatives,
Washington, D.C.

DEAR MR. SPEAKER: The Select Committee on Population has found that, although United States population growth has recently slowed, we still face many issues as a result of population change. This conclusion and this Report are based on eight days of hearings held in May and June 1978.

The major focus of this Report is on the consequences of two demographic trends, the changing age composition of the population and the changing geographical distribution of the population. Our conclusion is that the Government must better anticipate population change and develop more effective policy responses to it.

The huge "baby boom" generation has had a tremendous impact. The 1950s and 1960s saw frenzied activity in the education system as first primary schools, then secondary schools, and finally colleges and universities undertook massive construction programs and teacher training programs to accommodate this giant "baby boom" generation. In the 1970s this generation of students began to exit the classroom, leaving in their wake empty schools and unemployed teachers. The major institutions in this country will face similar disruptions for the next 50 years, as the "baby boom" generation continues to move through its life cycle, leaving the problems of the "baby bust" in its wake.

With fertility at an all-time low, movement of people within the country has become a major component of growth or decline in cities, towns, States, and regions of the Nation. Many of our major metropolitan areas and the Northeast and North Central Census regions are experiencing population loss, while nonmetropolitan areas and the regions of the South and West are experiencing rapid growth. The Committee examined the causes of this internal migration and the consequent problems facing the Federal Government and the governments of States and local areas. The Report gives special attention to the problems facing those areas that are losing population, because the problems of managing decline are new to the U.S. The United States was founded on the idea of growth and expansion, and the problems of decline require a new way of thinking and present a major challenge to policymakers today.

Current and future population trends must be taken into consideration in planning at the Federal, State, and local levels. This Report examines the capacity of the Federal Government to plan for popula-

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tion change and its consequences and the role of the Federal Government in assisting State and local governments to plan for the changes that will be occurring in their populations.

I want to thank the Honorable Daniel Akaka and the Honorable Dave Stockman for their leadership and hard work in co-chairing the hearings on these topics. This Report of the Select Committee on Population reflects their deep interest and dedication.

I would also like to take this opportunity to acknowledge the important contribution made by Dr. Anne D. Williams, who directed the staff work on the hearings. Special recognition should also be given to Dr. Linda G. Martin, who along with Dr. Williams supervised preparation of this Report. In addition, let me express appreciation for the industry and professionalism shown by the other staff members who played major parts in this work: Ms. M. Catherine Parks, Special Assistant; Dr. Leon A. Bouvier, Special Consultant; Ms. T. Lisa Stolp and Ms. Stephanie A. Tames, Research Assistants; and Ms. Diane Rice, Intern.

I would also like to congratulate other key members of the Select Committee Staff: Dr. Michael S. Teitelbaum, Staff Director; Dr. Maris A. Vinovskis, Deputy Staff Director; and Ms. Sharon Kite, Administrative Director, who coordinated all the work of the Select Committee with great distinction. Also instrumental in the work of the Select Committee have been Mr. Frank J. Antonelli, Printer; Mr. Theodor Schuchat, Writer/Editor; and Support Staff Members Mrs. Dorothy K. Cavanaugh, Ms. Dee L. Kuhn, Ms. Marty J. Crossland, and Ms. Sharon Prevost. I thank them one and all.

With every warm best wish,

Yours,

JAMES H. SCHEUER,
Chairman.

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FINDINGS

1. In the quarter-century between 1950 and 1975 the United States population increased by over 61 million people—or by about 40 percent. Such growth is rare among developed countries, where fertility and mortality generally are both low and population growth is minimal.

2. Despite the fact that U.S. fertility is at a near all-time low, the population of the United States will continue to grow for several decades because the proportion of young adults in the population will be quite large as the “baby boom” generation reaches adulthood and produces children.

3. There has been a steady decline in U.S. mortality since 1900, but the Nation still ranks as low as 7th in the world in terms of life expectancy for females, 18th in male life expectancy, and 15th in infant mortality. Substantial differentials in life expectancy according to sex and race persist in the U.S.

4. Population size can change only through natural increase or decrease (when the number of births is larger or smaller than the number of deaths) or through an imbalance between in-migration and out-migration, or both. Recent declines in fertility have reduced the role of natural increase in determining our total population growth, and immigration—both legal and illegal—is becoming an increasingly important component of the growth of the U.S. population.

5. A distinction should be made between population projections and population predictions. A projection calculates the future population under clearly stated assumptions about future demographic behavior but says nothing about whether those assumptions are likely to hold true. Predictions, on the other hand, involve the choice of the projection which seems most likely to occur. Fertility behavior is the most difficult demographic component to predict, since unpredictable factors such as new contraceptive techniques, variations in the economy, and changes in the labor force participation of women affect childbearing decisions. It is important, therefore, to consider several different assumptions about future fertility behavior when making projections of the U.S. population.

6. Most analysts would agree that population growth must ultimately cease, because global resources are not infinite. They disagree, however, about the meaning of “ultimately.” Despite debate over several decades, there is no agreement about an optimum population size for the United States.

7. Economists agree that, since labor is one of the major inputs to production, a rise in population and thus labor force will lead to a rise in total gross national product. They disagree about what will happen to per capita output, however, because it is unclear how much investment will accompany the labor force growth.

8. The 15-year postwar “baby boom” is of tremendous continuing importance, because more people were born in this period than in the

same time-span before and after it. As the large number of people born during the "baby boom" passes through each age group, the institutions that deal with population of each age will undergo the strain of rapid expansion followed by the often more painful task of retrenchment due to the arrival of the "baby bust."

9. Although the dependency ratio (the number of "dependent" people under age 18 and over age 64, per 100 "active" people age 18 to 64) has not changed much in recent years, the dependent population has aged dramatically. In 1900 there were 10 youths under age 18 for every elderly person; by 1977 there were only 3 youths for each person 65 and over.

10. Contrary to common belief, fertility decline, not mortality decline, is the principal ingredient in the aging process of a population. When fertility declines, the proportion of children in the population declines and hence the average age increases.

11. Since 1965 the number of preschool children (under age 6) with mothers in the labor force has increased by 65 percent despite declining fertility. The reason for this growth is the rapidly growing labor force participation of women. A consequence of the growth is a rapidly growing demand for day care.

12. The number of children with working mothers is likely to increase in the future for two reasons. First, in the 1980s the number of women in their childbearing years will be at its peak as the "baby boom" comes of age; if each woman averages about 2 children, then the number of children under age 6 will increase by about 25 percent between now and 1990. Second, the labor force participation rates of women with preschool children and schoolage children are expected to continue to rise.

13. If current child care arrangements are extrapolated, the number of children of working mothers in day care centers and nursery schools will increase by two-thirds between now and 1990, from 344,000 to 535,000. Most children, 6.5 million, will still be cared for either by relatives or by another person in the child's home.

14. Changing age composition affects the educational system by creating substantial variations both in enrollments and in the size of the pool of teachers. The 5 to 13 age group grew from 23 million in 1950 to almost 37 million in 1970. The high school population doubled in size between 1950 and 1975. The number of young adults (age 18 to 24) increased from 16 million in 1950 to only 16.1 million in 1960, but then grew rapidly to 24.7 million in 1970. Consequently, shortages of educational facilities and teachers plagued elementary schools in the mid-1950s and secondary schools in the 1960s.

15. The primary school age population is projected to decline between now and 1985, to increase between 1985 and 1995, and to decline again from 1995 to 2010. These same trends will be reflected in the secondary school population and college age population about 5 and 10 years later. Therefore, solutions for disposing of excess educational resources today must also consider the projected enrollment increases of the future. Policymakers must balance the cost today of unemployed surplus physical and human resources against the cost of building them up later when they may be needed for a larger school population.

16. Data needed for proper educational planning are generally not available, particularly for local areas. Predicting future youth population is very difficult for small areas, such as a school system, because of the difficulty of predicting migration patterns, particularly for young adults with children.

17. The labor force has increased rapidly in the past decade, with two important consequences. First, there is an increased proportion of inexperienced workers, who have higher unemployment rates than experienced workers; and consequently the average unemployment rate is higher than it would be otherwise. Second, group-specific employment rates have increased, for both experienced and inexperienced workers. Black male teenagers have been especially hard-hit; in 1976 their measured unemployment rate was 35.4 percent, five times that of the labor force as a whole.

18. In 1950, about 31 percent of all women were in the labor force; by May 1978, 50 percent were working or seeking work outside the home. As a result of this growth, only one-sixth of American families now fit the traditional picture of a breadwinner husband and a homemaker wife caring for dependent children.

19. The recent shifts in the balance of young versus older workers have made older workers relatively scarce and thereby created a corresponding shift in their relative earnings. For example, male college graduates age 45 to 54 now earn 63 percent more than those 20 years younger; in 1968 the advantage of the older college graduates was only 38 percent.

20. The "baby boom" generation may never achieve the relative economic success of the generations immediately preceding it or following it, because its large size results in an oversupply of workers in that age group. A possible offset to this relative disadvantage is the higher educational attainment of the "baby boom" as compared to older generations.

21. Under moderate assumptions, the labor force can be expected to increase from 83 million in 1970 to 119 million in 1990. The rate of growth will differ for the various age and sex groups, though, as the "baby boom" generation ages and as women's labor force participation grows.

22. The high crime rates of the late 1960s and the early 1970s can be partially explained by the large proportion of youth in the population, the result of the "baby boom." Young people are more likely than older persons to be arrested for crimes, and thus a young population pushes up the crime rate. With continuing low fertility, the population will age somewhat, so we can anticipate lower crime rates in the future if the crime rates of different age groups remain constant.

23. The rapidly declining number of births in the late 1960s and early 1970s will create by the 1980s a contracting pool of 18- to 24-year-old males, the group from which the majority of military manpower has come in the past. However, the increasing reliance on women in the armed forces may result in a larger group of potential recruits than has been available.

24. The elderly population (65 years and over) is projected to grow to 34 million by 2010 and then to 52 million by 2030. The proportion of the elderly in the total population, which was 10.7 percent in 1976, will start to rise rapidly in 2010, as the "baby boom" generation begins to reach the age of 65. It will peak in the year 2030 at between 14 and 22 percent of the population, depending on future fertility behavior.

25. The most salient feature of the elderly population is its heterogeneity. Rising life expectancy means that there can be several generations within the elderly classification. Of the 6.9 million increase in the elderly population in the 1980s and 1990s, almost three-fourths will be in the 75 and over age group.

26. Average per capita medical expenditures for the elderly in 1976 were \$1,521, three times the average for the entire population. Because medical expenditures rise disproportionately with age, within the "older" elderly age groups there are substantial financial burdens arising from medical care and personal assistance. Failing health with advancing age means that the proportion that is institutionalized rises from 1 percent in the 65 to 74 group to 24 percent in the 85 and older age group.

27. Marital status of the elderly is greatly affected by higher mortality rates for males, which create a growing excess of women as age advances. In 1977 there were 5 women for every 4 men in the 65 to 69 age group, but twice as many women as men in the 85 and over age group. The advantage in life expectancy of females over males is expected to continue to increase in the future; thus, the female elderly population is expected to grow even more rapidly than the male elderly population so that there may be five women for every two men in the 85 and over age group by the year 2000.

28. The stated preference of most elderly people is to live independently, but near their children. The increasing tendency for young people to live far from their parents, however, reduces the assistance available to older people from the family network. In addition, rising incomes and better health of the elderly have increased their own mobility. Thus, the proportion of elderly people living with a relative other than a spouse has fallen from 14.6 percent in 1965 to 9.0 percent in 1975.

29. The few long-term studies of the elderly show that the changes in their living arrangements represent a process of successive adjustments to worsening health and to the inability of the family to provide needed care. The typical transition goes from an independent household, to an apartment or room in a retirement home or in the home of an adult child, to an institution. Suggestions to ease the transition and maximize independence include home health care, personal care, and chore services; foster care, day care, and congregate community housing; and subsidies for remodeling homes of the elderly to suit their needs better. Living arrangements, however, depend as much on income as on the availability of alternative residential environments.

30. There is a concentration of non-migrant elderly in the Central States and the Northeast, and an even larger proportion of the elderly in Florida, long a popular destination of elderly migrants. New retirees are moving also to California, Arizona, the Ozarks, and Oregon.

31. Local areas tend to "age in place." For example, the young adults who lived in the cities in the 1920s and 1930s have remained there, but their children, the young adults of the 1940s and 1950s, moved to the suburbs, leading to the current concentration of elderly in the "gray ghettos" of central cities.

32. The Census Bureau's past projections consistently underestimated the growth of the elderly population, primarily because of unexpected decline in mortality rates. Life expectancy at age 65 has increased by more than a year in the last decade.

33. More data, analysis, and research are necessary for making informed policy with respect to the elderly. Especially needed are data in greater detail by age, continuing surveys over long periods, and considerations of alternative mortality assumptions in making projections of the elderly population.

34. Public expenditures for an elderly person are said to be three times the public expenditures per youth. Much of the spending for youth is for education, financed largely by State and local taxes, while most of the public spending for the elderly is federally financed. Hence changing age composition leads to changes in the level of government providing necessary services.

35. Federal spending for the elderly amounts to nearly one-quarter of the Federal budget, and it is projected that, by 2025, 40 percent of the budget will represent outlays for the rapidly growing elderly population.

36. Expenditures for Old Age Survivors and Disability Insurance, commonly known as Social Security, will start to exceed payroll tax revenues around 2010 when the "baby boom" generation begins to retire. The system will be in deficit by about 2025 unless changes are made in the interim. The more rapid the decline in mortality in the future, the greater will be the actuarial deficit, because expenditures will increase more than tax income. Lower fertility in the future would also lead to an increased deficit early in the 21st century, since tax income would be lower. However, increased labor participation of women would lead to a decrease in the deficit.

37. The recent decline in fertility and changing migration patterns have resulted in significant shifts in the size and structure of the regional and local populations within the U.S. During the 1960s, when fertility was higher, a community could lose population through migration and still experience growth through natural increase. Today, natural increase is low, and migration is the primary determinant of the changes in local population size.

38. Historically, Americans have moved from nonmetropolitan areas to metropolitan areas. Since 1970, though, more Americans have been moving away from metropolitan areas than into them. This migration has been both to places adjacent to metropolitan areas and to towns and counties that are entirely rural.

39. The movement to nonmetropolitan areas has had great impact on the Nation's major urban centers. By 1975, one in three metropolitan residents was living in an area of population decline.

40. From 1970 to 1975, the population of the South Census Region increased by 5.1 million people, in contrast to a 3.4 million increase for the previous five-year period. (Since 1970 there has been a net influx of people to the South and an end to the previous net out-migra-

tion of blacks.) In contrast, the North Central region's population increase slowed considerably, and the Northeast had very little growth. The West grew rapidly in the past five years.

41. More than one-sixth of the U.S. population moves in a typical year. Over two-thirds of the moves do not involve changes in the county of residence, and many involve only a change of address and not a change in employment. Even so, the moves of so many people each year have important consequences for the places involved, since different types of people stay and go.

42. Half of all Americans who move are either adults age 18 to 29 or young children moving with their parents. Migrants are typically better educated than nonmigrants. White-collar workers, especially professionals, are more likely to move than manual workers.

43. In general, people move to improve their well-being. People are "pushed" from their original place of residence because of adverse conditions, or they are "pulled"—that is, they leave because they perceive conditions as significantly better elsewhere. Often both types of factors act together to influence migration decisions.

44. Unemployed workers are more likely to move than employed workers who are satisfied with their jobs, but the migratory response to unemployment is weak and uneven. Often people move without sufficient information on the prospect of a job at their destination, and many of the unemployed return to their original place of residence fairly soon.

45. All major western European countries now have some form of subsidy to assist persons migrating from rural to urban areas. Experimental relocation-assistance programs in the United States (conducted between 1965 and 1969 under the auspices of the Department of Labor) demonstrated that many unemployed persons willing to relocate can be helped to find jobs elsewhere.

46. Despite widespread belief to the contrary, the higher proportion of welfare recipients in cities is not due to migration to those areas but is due to low out-migration of the welfare population from them.

47. The growth of employment and in-migration are closely linked. Although it is not yet entirely clear whether jobs or people move first, recent studies suggest that migration of firms has not been an important component of employment shifts. Most of the growth of local employment has been due to expansion of existing firms and establishment of new ones.

48. Although the Federal Government has not had direct policies to influence the movement of population within the United States, it has affected migration indirectly through various programs. For example, the interstate highway system, subsidies for home ownership and new capital investment, and assistance to rural areas have all contributed to locational decisions of individuals and firms. Most of the effects of Federal programs on migration are unplanned and unintended consequences of decisions made for other reasons.

49. More often than not, our people and their elected and appointed officials are not equipped to cope intelligently with population decline, because our Nation since its pioneer beginnings has been accustomed to the assumption of growth and expansion, not decline and contraction.

50. Areas with prolonged out-migration generally have an underrepresentation of young adults, declining per capita income, and decreasing employment. There is an erosion of the tax base, but not necessarily a commensurate contraction of demand for services, which increases the burden of taxation.

51. Formulas for the distribution of Federal aid typically include a population-size factor. Therefore, if an area loses some of its inhabitants, it is likely to lose funds when it most needs Federal assistance—during the transition to a smaller tax base and changed needs for social services.

52. If migration continues in its recent (1965-1975) pattern and pace, at least eleven seats in the House of Representatives will be reapportioned after the 1980 Census. The Northeast and East North Central States will lose seats, with New York alone expected to give up four seats. The South will probably gain as many as seven seats and the West four.

53. Rapid population growth means an increase in the demand for services, as well as higher unit costs for those services. For example, small growing communities which in the past relied on part-time police officers and volunteer firefighters may need to hire new full-time public service workers. New home construction requires expansion of drainage, sewer, water, and transportation systems. In addition, increased population growth can exert pressure on the environment and resources of growing areas.

54. The States of Florida and Hawaii have been very active in managing their rapid population growth. The Florida Local Government Comprehensive Planning Act of 1975 requires that, by July 1, 1979, all local governments prepare and adopt a plan for growth and development. On May 22, 1978, Hawaii became the first State to adopt by statute a State plan for future long-range development. Hawaii officials are especially concerned about the impact of immigration on their limited resources.

55. Better knowledge of current migration is needed to accommodate future population movements within the United States more efficiently. We need to know why and how often people move, to and from which places, and their circumstances both before and after the move. At present we do not have such information in usable detail.

56. Research on internal migration is conducted in several Federal agencies, but it is sporadic, poorly coordinated, and less than comprehensive. Federal support for research on population movements conducted by others does not remedy these deficiencies.

57. The Federal Government has no capacity to plan systematically for population change; yet changes in the size, age composition, and geographical distribution of the population can, and often do, have profound effects on Federal policies, and Federal policies and programs often influence the direction of population change unintentionally.

58. The United States has no explicit policy outlining goals relating to the overall size, growth, and distribution of the population; and the benefits and disadvantages of those policies and programs that do affect the U.S. population are not assessed in terms of their impact on population.

59. Policymakers at all levels of government and the American public have a limited understanding of the long-term consequences of population change for individuals and society as a whole. The Federal Government has not made a concerted effort to educate either the public or the policymakers about population trends and their consequences.

60. The statistical activities of the Federal Government are fragmented and suffer from insufficient coordination and overall planning. One result is that the quality and timeliness of the population data collected by the Government are not good, and the statistical information is not always relevant to current policy issues.

61. Most Federal agencies have some capacity for long-range analysis, including limited demographic analysis, with respect to their programs and policies. Usually, however, population is treated as an unalterable variable. Little attention is given to the impact that a given policy may have on population change or to the effect that the consequent demographic change may have on other programs administered by that agency or by other Federal agencies.

62. There has been a dramatic increase in the need for demographic data on regional, State, and local areas, partly as a result of the expansion of State and local governments and partly as a result of the increase in the use of population as a factor in the allocation of Federal funds to State and local governments.

63. The Federal-State Cooperative Program for Local Population Estimates (FSCP) has been relatively successful in promoting cooperation between the States and the Federal Government for the preparation of county-level population estimates. However, problems remain in producing timely, reliable estimates of local population, particularly estimates of demographic characteristics, estimates of the population of internal service areas (such as school districts), and household estimates. The ability of States to produce accurate demographic data has been hampered by the failure of the Federal Government to provide financial and field technical assistance to support population work at the State level.

64. The deficient quality and timeliness of population estimates of State and local areas create problems when these estimates are used as the basis for allocating Federal funds. Areas experiencing rapid population growth or decline may not receive their fair share of Federal funds if the data are outdated.

65. Currently, there is also an absence of reliable and uniform local population projections. The Federal Government has not established guidelines for the preparation or application of population projections for counties or other local areas, although these projections are increasingly used as a basis for allocating funds under major Federal programs. The allocation of Federal funds can have a powerful influence over the direction of population change in a region, and such change may not be consistent with local or national goals. Furthermore, expenditures based on inflated projections may waste Federal funds and burden local governments with the maintenance of oversized facilities.

RECOMMENDATIONS

1. *Congress should investigate more fully the effects of the population size and growth rate of the United States on the well-being of our people.*

2. *There is a need to create greater awareness among our citizens of the causes and consequences of population change. Federal funds should be available to support population education in elementary and secondary schools and programs to educate public officials at all levels about demographic change and public policy.*

3. *Many analysts believe that in the future the fertility rates in the United States will fluctuate rather than follow a steady trend. In view of the importance of these fluctuations for all social policies, the Census Bureau should update its projections frequently to take into account possible fluctuations in fertility rates.*

4. *Federal agencies which prepare long-range projections, such as the Census Bureau and the Social Security Administration, should consider using a wider range of assumptions in projecting the extreme cases. An example might be to treat recent declines in both fertility and mortality not as short-term aberrations, but as the beginning of new long-term trends.*

5. *Given the increasing number of young children both of whose parents work, Congress should study current and future demand for and supply of various types of child care facilities and consider alternative methods of financing child care services, such as providing more liberal tax credits for these services.*

6. *Given the increasing number of women in the labor force who have young children and the need for more flexible work schedules, the Select Committee on Population supports the institution of flexitime and part-time work schedules in all areas of public and private employment.*

7. *Given the impact of demographic change on the demand for educational facilities and the need for more flexibility in their use, the Federal Government should encourage and assist local districts to make available underutilized school buildings for the educational needs of the entire population and the provision of other social services. The Select Committee on Population further recommends legislation to require that Federal agencies investigate the possibility of utilizing empty school facilities before constructing new Government buildings, and programs to assist school administrators in the disposition of excess school facilities, if that is desirable.*

8. *Given the fluctuation in school enrollments and the resultant demand for teachers, the Select Committee on Population supports Federal programs to increase flexibility in the supply of teachers and to retrain excess teachers for alternative careers.*

9. *Demographic factors should be considered when Federal economic (and particularly employment) policies are formulated. For example, demographic factors should be considered in formulating policies to:*

- a. *establish full employment goals;*
- b. *determine the extent of both unemployment and underemployment;*

c. increase the employment of particular demographic groups, such as by targeted training and job identification for the women and youth who represent most of the new entrants into the labor force;

d. determine the minimum wage in such a way as to take into account its effects on various demographic groups; and

e. match workers with jobs they wish to take.

10. Accurate forecasts of the future labor force are essential for planning employment policies; increased resources should be devoted to improving forecasts of the labor force, particularly the female labor force.

11. There is much speculation but few facts as to what the "baby boom" generation will experience because of its large size. Research on the relative well-being of the "baby boom" generation should be supported, with a view to predicting the future mobility, earnings, needs, and social impacts of its members. In particular, almost nothing is known about the current activities of the large number of youths who are not now working or in school, nor is much known about the lifetime effects of their youthful experiences. Data should be collected and research undertaken to study these youngsters intensively, with a view to making policies to improve their life prospects, both now and in the future.

12. Use of long-range projections by the Social Security Administration and the Health Care Financing Administration provide policymakers with a valuable planning tool, although not precise predictions. Congress should identify other Federal programs which are closely related to age and require for them similar projections of long-range expenditures, as they relate to the shifting demographic situation.

13. Among the many special needs of the elderly that are not being met is assistance in maintaining independent households, as many older people wish to do. Congress should investigate alternative methods of filling these needs, such as:

a. home health care, personal care, and household help for the elderly;

b. alternatives to family support, such as foster care, or placement of lodgers in the homes of the elderly;

c. single-level housing; and

d. congregate housing arrangements.

14. The national data base concerning the elderly should be expanded, in particular by:

a. tabulating and publishing data on the elderly wherever possible by 5-year age groups, and at least by 10-year age groups. Where necessary, the agency involved should consider expansion of the sample, or over-sampling of the elderly to obtain a reliable data base;

b. conducting long-term surveys, to understand better life changes that take place in the aging process; and

c. considering a national survey of the elderly as a means of developing integrated information on the interactions of health, income, social, and other characteristics which determine the complex and interrelated needs of the elderly.

15. *The Census Bureau should develop more information on the future elderly population—its size, characteristics, and location—and make this information available to agencies which plan service facilities for the elderly.*

16. *Congress should strive for a consistent and integrated retirement policy applicable to such statists as those dealing with Social Security, mandatory retirement, and private pensions.*

17. *The Select Committee on Population supports the debate now underway concerning the best responses of the Social Security system to the future pressure of the "baby boom" generation's retirement and efforts to develop thoughtful policies and to prevent crisis-oriented, last-minute, and partial solutions. All alternatives should be explored and thorough discussion of alternative policies concerning taxes, benefits, and coverage should be encouraged. The Select Committee in particular recommends thorough consideration of the cost and benefits of alternative ages of eligibility for Social Security.*

18. *The Select Committee on Population further recommends expansion of research on the implications of an aging society for the financing of all social programs and for the changing balance of Federal versus State and local revenues and expenditures.*

19. *Marriage has become less common among younger women; divorce rates have risen; fertility has dropped; women now work more outside the home; women's life expectancy continues to increase faster than that of men. The implications of these changes for the financial well-being of women in their old age have not always been reflected in policy. The Select Committee on Population therefore supports the current review by Congress of the special provisions of the Social Security law which deal with women and recommends swift completion of this review.*

20. *Congress should investigate the impact of present laws and programs on the decisions of individuals and firms to locate or relocate within the United States. Prior to enactment of new legislation, Congress should review potential impacts on population movements.*

21. *Because the unemployed often lack funds, information, and skills to take advantage of job opportunities in other parts of the country, the Federal Government should help individuals improve the economic outcome of migration by providing information on job opportunities throughout the country, by developing training programs linked to such opportunities, and by providing transitional assistance to the unemployed who do move to take a job.*

22. *Because population shifts change the socioeconomic profile of local populations and some localities bear a disproportionate burden in supporting the disadvantaged in the United States, the Federal Government should assume a fair share in the provision of services which have a large component of income redistribution, such as education, health, and welfare.*

23. *American society is still structured around the assumption of continued population growth, and little is known about how best to manage the population decline which is currently taking place in some localities and the declining number of children entering our schools. The Select Committee on Population recommends the support of research on the "management" of decline with a view to training administrators to anticipate and plan more efficiently for changes in population size, both upward and downward.*

24. Because population decline is not entirely a regional phenomenon and because the concept of balanced national growth is ill-defined, *Federal aid should be targeted to distressed individuals and localities regardless of their regional location.*

25. The use of population size alone as a criterion for Federal aid to localities ignores the effects on the demand for services of changing population characteristics associated with growth or decline. *The Select Committee on Population recommends a review of Federal formulas for aid to localities and consideration of other factors which better measure the need of localities and their residents for Federal assistance.*

26. Information on migration in the United States is deficient and research in this field is fragmented. *A study of Federal research on internal population movements is recommended to investigate, in particular:*

- a. *the capabilities within the Federal Government for research,*
- b. *Federal support for non-governmental research,*
- c. *coordination of research activities and support by the various Federal agencies, and*
- d. *the availability, quality, and timeliness of the data needed for such research.*

27. Because communities lack funding or expertise for long-term planning for population change, *better utilization of Federal funds available for local planning efforts is recommended.*

28. Policies which influence or are influenced by population change can be found in all Federal agencies. Yet, no single agency has the authority to coordinate these often conflicting policies. *The Committee recommends that the Congress undertake a thorough investigation to identify all population-sensitive programs and policies, to assess their impact on population, and to consider alternative mechanisms for improving the ability of the Federal Government to:*

- a. *conduct continuing analysis of the interrelationship of demographic change and Federal programs and policies;*
- b. *coordinate programs and policies which will be affected by changes in the size, composition, and geographical distribution of the population or which may affect population; and*
- c. *develop alternative policies and programs for planning for future population change and assess the short-term and long-term costs and benefits of each course of action.*

29. *The Census Bureau should report more fully on the long-term consequences of projected population trends for various institutions, and the Demographic Analysis Division of the Census Bureau should be provided with sufficient funds and staff to perform this task.*

30. *All major Presidential reports such as the Employment and Training Report, the Environmental Quality Report, the Urban Growth Report, and the Economic Report should include more extensive demographic analysis, including identification of the policies and programs that will be affected by future population changes and recommendations for action by the Congress and the Executive. Congress should exercise more vigorously its oversight responsibilities to ensure that these reports are prepared in a timely manner and are consistent with the original intent of the statutes mandating the reports.*

31. To improve the accuracy, timeliness, and policy-relevance of the statistical data produced by Federal agencies and to improve the access of all Federal agencies and departments to data for effective policy development, the Committee supports the efforts of the President's Reorganization Project to provide coordination and to develop an overall plan for the Federal Statistical System.

32. To protect the individual's right to privacy, the Federal Government must continue to maintain strict control of the use of administrative records in the preparation of demographic data. When seeking information from citizens, the Federal Government should strive to lessen the burden on respondents by improving questionnaires used for information-gathering.

33. The Committee supports the efforts of the Census Bureau to improve the review process by which State and local governments can appeal the intercensal estimates prepared by the Bureau for use in the General Revenue Sharing program. The Committee further supports the efforts of the Census Bureau to develop a more efficient system for local review of the 1980 Census counts prior to their publication.

34. A mechanism should be established to review and coordinate the use of projections by Federal agencies and to establish clear guidelines for the preparation and use of projections for States and local areas in Federal funding allocation formulas. The Committee recommends that:

- a. projections be based on demographically sound methodologies;
- b. projections be updated regularly;
- c. checks be applied to assure that the total of all State projections and all projections for local areas be more or less equal to reasonable projections of the total population for the country as a whole—otherwise the local and State projections become misleading or meaningless; and
- d. State and local governments and the public be encouraged to participate in the preparation of projections.

35. The Statistical Policy Coordination Committee of the President's Cabinet should conduct a survey of all Federal agencies using population projections to determine how those projections are developed and used.

36. The Census Bureau should expand its support for research on methods of preparing:

- a. estimates of population, demographic characteristics, and migration for States, counties, and subcounty units; and
- b. population projections, projections of demographic characteristics, and projections of migration at the subnational level.

37. The Committee supports the efforts of the Census Bureau to strengthen the Federal-State Cooperative Program for Local Population Estimates (FSCP) and recommends greater efforts to familiarize State and local officials with available resources. The Committee further recommends that the Census Bureau provide funds to the FSCP representative agencies to support the demographic analysis activities being undertaken by the States. Moreover, the Committee recommends that a parallel Federal-State Cooperative Program for Population

Projections be established for the purpose of developing uniform and reliable projections for States and local areas and improving the methods used in preparing these projections.

38. *An extensive investigation should be made of the demographic research capability of the Federal Government and the organization of Federal population research activities. This study should undertake to determine the areas of population research not adequately supported by the Federal Government and should examine the role of the Center for Population Research of the National Institute of Child Health and Human Development as the lead agency for population research. Further, the Committee recommends examination of the level and procedures for support of outside research and the need to provide long-term funding of certain demographic research.*

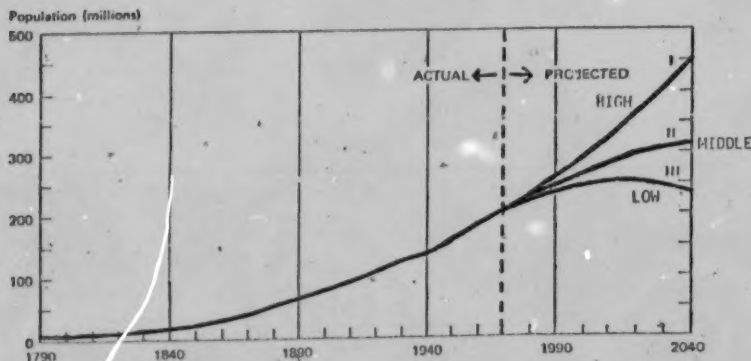
39. *The Center for Population Research of the National Institute of Child Health and Human Development and other Federal agencies involved in demographic research should extend their research into all aspects of demographic behavior.*

I. CHANGING SIZE OF THE UNITED STATES POPULATION

From a mere 4 million inhabitants at the time of the first census in 1790, the United States has grown to a population of 218 million in mid-1978, the fourth largest nation in the world after the People's Republic of China (930 million), India (635 million), and the U.S.S.R. (261 million). Growth will continue at least into the next century, but there is some disagreement as to whether it will then continue or level off. Figure 1 shows the historical pattern of U.S. population size, together with the range of projections of our population over the next 60 years.

FIGURE 1

United States Population Growth, 1790-2040



Source: U.S. Department of Commerce, *Social Indicators 1976*, December 1977, p.4.

This chapter examines recent population changes in the U.S., prospects for future growth, and the advantages and disadvantages of further population growth.

A. RECENT CHANGES

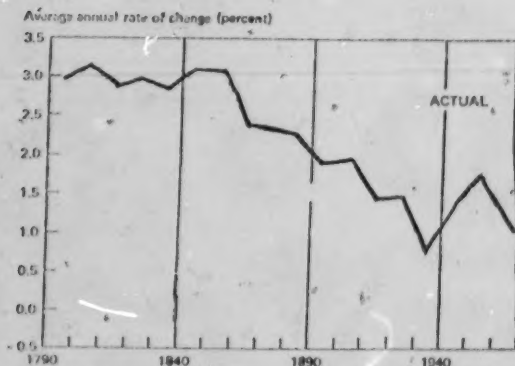
Prior to World War II many experts were prophesying the imminent arrival of zero population growth in the U.S. Between the Censuses of 1930 and 1940, only 9 million people were added to the population, and fertility reached an all-time low in 1937. As a result, little further increase in population was predicted.

With the end of World War II in 1945, the demographic situation changed dramatically, however. Nineteen million people were added to the population between 1940 and 1950, when over 150 million Americans were enumerated. During the 1950s, growth was even more rapid; almost 30 million people were added to the population—more than in any other decade. Between 1960 and 1970, growth slackened a bit as about 23 million were added. Growth has since slowed even more and is not expected to exceed 20 million for the 1970–1980 period.

In the quarter-century between 1950 and 1975, the U.S. population has increased by over 61 million people—or by about 40 percent. Growth of such magnitude is rare among developed countries, where fertility and mortality generally are both low and growth is minimal. Figure 2 illustrates historical changes in the U.S. population growth

FIGURE 2

Average Annual Rate of Population Change Between Decennial
Census Years: 1790–1970



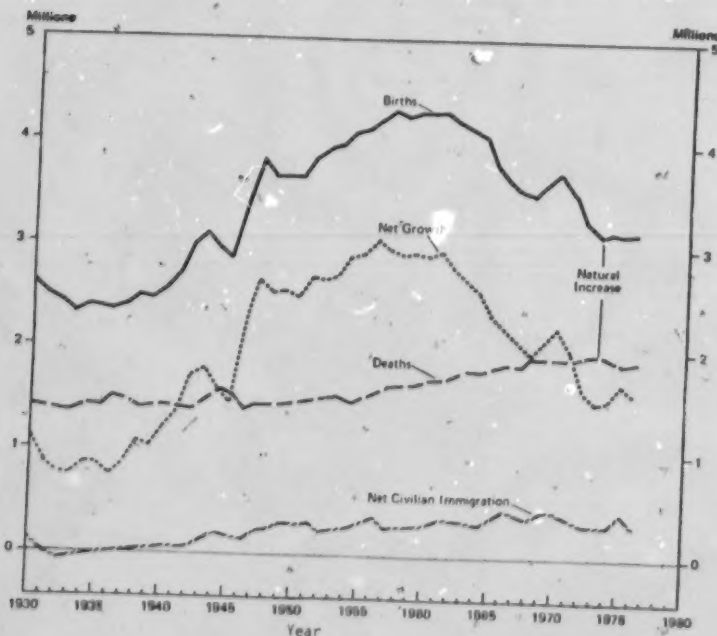
Source: U.S. Department of Commerce, *Social Indicators 1976*, December 1977, p. 4.

rate. Average annual rates of population growth fell steadily from the 1700s to a low of 0.74 percent in the 1930s. The average annual rate then rose to a peak of 1.71 percent in the 1950s, the highest recorded since the first decade of this century. Since 1960 the population growth rate has dropped sharply, and it is now 0.8 percent per year, almost as low as in the 1930s.

A population's size changes in only three ways: people are born, people die, and people move in or out of the counted area. To put it another way, growth can occur only through natural increase (the numerical difference between births and deaths) or net immigration (the difference in the numbers of people moving in and out). To understand population change in the U.S., it is necessary to look at each of these demographic processes individually. Figure 3 shows these components of the population growth of the United States over the last 50 years. The following discussion assesses separately the changes in fertility (births), mortality (deaths), and net immigration and then determines the relative contribution of each to our population growth.

FIGURE 3

Annual Levels of Net Growth, Births, Deaths, and Net Immigration: 1930-1976



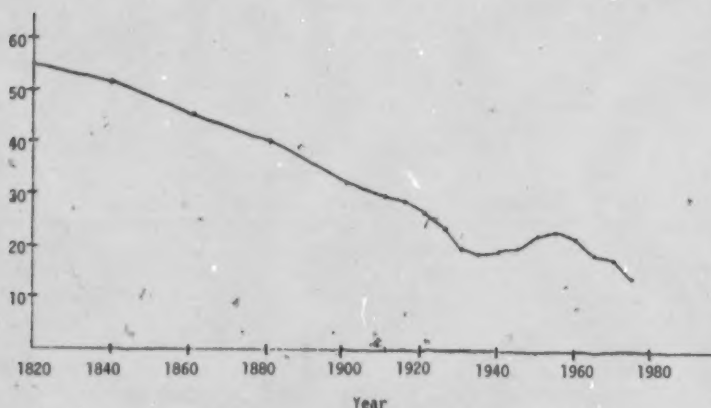
Source: U.S. Bureau of the Census, *Population Estimates and Projections*, Series P-25, No. 706, September 1977.

1. FERTILITY

Of the three demographic processes, fertility has exhibited the greatest variation over the past 50 years in the U.S. Figure 4 shows the U.S. birth rate (annual number of births per 1000 population), which fell steadily to as low as 18.4 in 1936 and then increased slowly after the Depression. As had been expected, the late 1940s saw large increases in fertility, as young couples who had postponed childbearing during the war began to have their children. The length of time that fertility remained high, however, was totally unexpected.

FIGURE 4

Birth Rate (Births per 1000 Population): 1820-1975



Sources: U.S. Bureau of the Census, Historical Statistics of the United States, 1975.
 U.S. Bureau of the Census, Statistical Abstract of the United States, 1977.

Rather than dropping after a few catch-up years, as happened in most other developed countries, U.S. fertility remained high until the early 1960s. Indeed, the birth rate remained above 25 births per 1,000 population from 1947 through 1957. The more meaningful total fertility rate (the number of babies that a woman would have in the course of her life if she successively reproduced at the current rate for women at various ages in the population) was 3.7 in 1957, or 60 percent higher than in 1940. Between 1955 and 1964 over 4 million births were recorded each year, something never observed before or since. (See figure 3.)

The baby boom is only partially explained by the delayed reaction to World War II. A number of other factors were at work:

- The timing of fertility changed. When older women who had delayed their parenthood were having children at relatively late ages, younger women began having them at earlier ages. Thus, women of two different age groups were having children at the same time. The length of the average interval between births also declined.
- The proportion of women who remained single dropped significantly in this period, and average age at marriage declined from 21.5 in 1940 to 20.1 in 1956.
- Childlessness declined to a new low, from 20.8 percent of all ever-married women who had completed their families prior to the "baby boom" to 10.6 percent of their younger counterparts after World War II.
- The promising economic situation encouraged parents to want larger families. Affluence also encouraged people to move to the suburbs where they had more room for raising children. Three or four children in the family became the norm.

All these factors contributed to the "baby boom." The people born between 1947 and 1964 will represent a bulge in the agecomposition of the Nation's population throughout their lives. Some implications of the "baby boom" bulge are discussed in Chapter II.

The birth rate once again began to fall in the 1960s, from 23.3 in 1961 to 17.5 in 1968. After a slight rise in 1969 and 1970, the birth rate resumed its decline, even though the proportion of females in the prime childbearing ages continued to increase. By 1976, the birth rate had reached an historic low of 14.7, and the total fertility rate was 1.76, well below replacement fertility of 2.1. (With current U.S. mortality rates, it takes an average of 2.1 births per woman to ensure that each generation will replace itself. If continued for 60-70 years, replacement fertility leads to zero natural increase.)

In view of the rising proportions of women in the prime childbearing ages, the decrease in fertility since 1970 has been remarkable. The causes of this so-called "baby bust" are not completely understood, but several contributory factors can be cited:

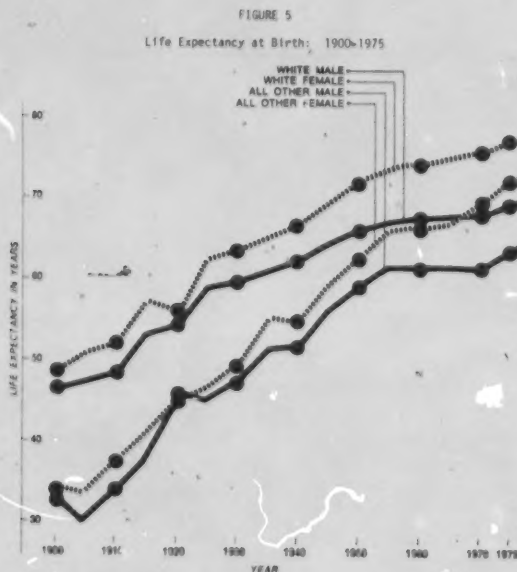
- Young adults today are marrying later than their predecessors, and more of them are deciding not to marry. The marriage rate declined from its peak of 11.0 (per 1,000 population) in 1972 to 10.0 in 1975, and has since fluctuated slightly around that level. Divorce rates continued to climb through 1977, although there is some evidence that they may now be leveling off. Since 1960, the proportion of women age 20 to 24 who are single has increased from 28 to 45 percent.
- Economic conditions may have contributed to reducing expected family size. Incomes of young adults recently have risen more slowly than in the past, thus contributing to lowered family-size goals.
- Better opportunities for women often pose a conflict between childrearing and alternative roles. More women are completing college and entering the labor force. Availability of these economic opportunities may have reduced their willingness to leave the labor force and raise children.
- Finally, control of fertility has improved in recent years. More effective contraceptives are available, sterilization of males as

well as females has become generally accepted, and abortion laws have been liberalized. These developments help couples avoid unwanted births and improve the timing of wanted births. The proportion of ever-married women age 25 to 29 who are still childless increased from 12.6 percent in 1960 to 21.7 percent in 1975.

As a result of these factors, U.S. fertility is now at the lowest level ever recorded, and the U.S. birth rate is among the lowest in the world. It remains to be seen what will occur in the future. Past fluctuations in fertility do not warrant excessive confidence in predictions of future fertility. New contraceptive techniques, variations in the economy, changes in the labor force participation of women, and unpredictable new social norms are factors that could drive U.S. fertility even lower than at present or send it as high as it was during the "baby boom." We have no assurance that fertility will not fluctuate as dramatically in the future as it has in the past.

2. MORTALITY

Mortality has fallen significantly over the last few years. In 1950 the death rate (deaths per 1000 population) was 9.6, and life expectancy at birth was 68.2 years. For the next two decades there was little progress in combating mortality. The 1970s, however, have brought new declines in death rates and corresponding increases in life expectancy. By 1976, the death rate had fallen to an all-time low of 8.9; life expectancy at birth was up to 72.8 years. Over the past 4 or 5 years mortality has fallen sufficiently to suggest that additional increases in life expectancy may be expected in the future. Figure 5 shows the spectacular improvement in life expectancy over the course of this century.

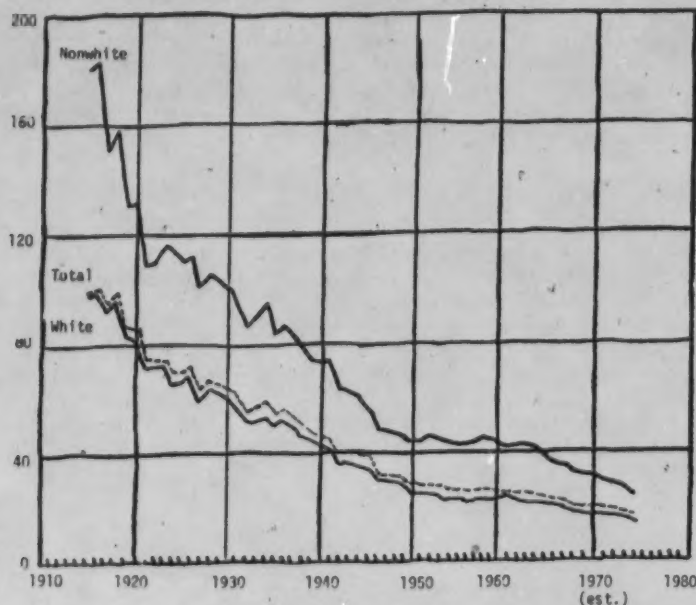


Source: National Center for Health Statistics; Testimony of Dorothy Rice before the Select Committee on Population, February 6, 1978.

Another important indicator of progress is the declining infant mortality rate (number of infant deaths per 1000 live births) shown in figure 6. When first measured at the beginning of this century, the

FIGURE 6

Infant Mortality Rates: 1915-1974

Deaths per 1000
live births

Source: National Center for Health Statistics, *Vital Statistics for the United States, Monthly Vital Statistics Report*, Vol. 23, No. 13.

U.S. infant mortality rate exceeded 100 per 1000 births—that is, one-tenth of all babies did not survive their first year. After a steady decline to 29.2 by 1950, the rate hovered there for about 15 years. In the mid-1960s it resumed its downward trend and by 1977 had reached 14.0. Maternal mortality rates, too, have fallen sharply over the last few decades.

Several factors contributed to these improvements in infant and maternal mortality: control of disease, rising incomes, better pre-natal and obstetrical care, lower fertility rates for older women (who have higher risks of complications and birth defects) and longer intervals between births—both due largely to more effective methods of contraception—and smaller desired family sizes, among others.

a. Cause of Death

The steady decline in mortality since 1900 has reflected substantial changes in the causes of death. In 1900 the three leading causes of death in the U.S. were pneumonia, tuberculosis, and diarrhea, as shown in figure 7. In the first half of this century, preventive measures were instituted or cures were discovered for most infectious diseases. By the 1940s the degenerative diseases—heart disease, cancer, and stroke—had become the leading causes of death. Today two out of three deaths are attributed to these three causes.

FIGURE 7
Ten Leading Causes of Death 1900, 1940, and 1976
(Deaths per 100,000 Population)



Sources: Leon F. Bouvier and Everett S. Lee, *Population Profiles*, No. 4, Center for Information on America, 1976, and *Monthly Vital Statistics Report*, Vol. 26, No. 12, Supplement, NCHS, March 30, 1978.

Perhaps the most encouraging development in recent years has been the significant decline in heart disease mortality, which contributed to recent improvements in life expectancy. For example, between 1950 and 1975 the death rate for heart disease for those age 45 to 64 fell by about one-third, and improvements were noted for other age groups and for both males and females in all racial groups. A number of explanations have been offered for this sharp decline in heart disease mortality, including:

- A decline in the proportion of adults who smoke cigarettes, as well as a shift to cigarettes with less tar and nicotine.
- An appreciable change in the American dietary pattern, especially the decline in per capita consumption of certain high-cholesterol foods.
- The development of drugs to control blood pressure, and major programs to detect and treat high blood pressure.
- Greater use of potentially life-saving medical innovations, such as open heart surgery, intensive care units, and swifter, better-trained rescue squads.

Deaths attributable to cancer continue to rise in number and in rate, in part because those who would previously have died of other causes now live long enough to get cancer. Another factor, as yet impossible to quantify, is the exposure to carcinogens (e.g., asbestos, certain chemicals, and radiation) which has accompanied industrialization.

b. Mortality Differentials

Differentials in life expectancy according to sex and race continue to persist, as was shown in figure 5. Moreover, the gap in life expectancy between men and women has been increasing. In 1900 a newborn female could expect to live 3 years more than her male counterpart. Today the difference is almost 8 years. Among developed countries, only the Soviet Union has a greater difference than the U.S. in the life expectancies of the two sexes. Females have lower death rates at all ages than do males, and the difference is growing, rather than diminishing.

Although racial differences in life expectancy continue, the gap is closing. In 1900, life expectancy for newborn nonwhites in the U.S. was only 33 years, not much higher than for Greeks and Romans at the time of Christ. Since the turn of the century, there has been great progress for nonwhites. Nonwhite life expectancy averaged 68.3 years by 1976 compared to 73.5 years for whites.

Undeniably, ours is a healthy, long-lived society, yet the U.S. still ranks 15th among the nations in infant mortality, 7th in female life expectancy, and 18th in male life expectancy. The U.S. has a long way to go before comparing favorably with Sweden which for 1974 had an infant mortality rate of 9.2 and life expectancy at birth of 75 years. A baby born in the U.S. in that year had an expectation of life of only 71.9 years.

3. INTERNATIONAL MIGRATION

About 50 million persons have migrated to the United States since Independence, and some 80 percent are believed to have stayed on. Immigration reached its peak at the beginning of the 20th century. Between 1900 and 1910, immigration to the U.S. was approximately 8.8

million or 12 percent of the entire 1900 population. Immigration then dropped sharply and reached a low of 0.5 million for the 1930s. Figure 3 shows the steady increase in the volume of net legal immigration since then, to the current inflow of about 4 million per decade.

There have been major shifts in the country of origin of immigrants to the U.S. At the turn of the century, the main sending countries included Italy, Germany, Austria-Hungary, and Poland. Today, the majority of immigrants come from Latin America and Asia. In 1971-76, only 7 percent of all immigrants to the U.S. came from northern and western Europe, regions that supplied 95 percent of the immigrants during the early history of the Nation. Illegal immigration originates in the same countries, in the main, from which legal immigrants come.

In recent years, the issue of illegal immigration has become prominent. This subject is discussed at length in the Select Committee's Report, *Legal and Illegal Immigration to the United States*. For present purposes, it is important to note that there is no way even of approximating the number of illegal immigrants presently living in the United States. Estimates range from 2 to 12 million. No one can say how many will remain here permanently and how many will go back and forth between the U.S. and their home countries. In 1977 over 1 million apprehensions were made of illegal immigrants, but an unknown number of these were repeat offenders.

Although the U.S. Government has gathered statistics on legal immigration since 1819, analysts agree that statistics on international migration are the least reliable of any in the population field because estimates of both emigration and illegal immigration are shaky and error-prone. In making estimates and projections of the immigrant population, the paucity of information makes it very difficult to be confident about derived figures. Consequently, the Census Bureau's estimates and projections do not take illegal immigration into account.

4. CONCLUSIONS

To repeat, the population of a country can change only through an imbalance between births and deaths, or between in-migration and out-migration, or both. Looking back to figure 3, we see that, because legal immigration and mortality have been relatively steady, changes in the net growth of our population over the last 50 years have been determined almost entirely by swings in the number of births.

However, the recent declines in fertility have reduced the role of an excess of births over deaths in determining total population growth, and immigration is becoming an increasingly important component of the growth of the U.S. population. Since the 1950s the annual rate of natural increase has dropped from 15 to 6 (per 1000 population). The rate of net legal immigration has remained almost constant at approximately 1.5 per 1000 population. Thus, legal immigration now contributes about 20 percent of U.S. population growth, compared to only 10 percent in the 1950s. Illegal immigration would increase this percentage by some unknown amount; some estimates run as high as 50 percent or more.

B. FUTURE SIZE

The unexpected "baby boom" led many to expect further rapid population growth for the United States. Predictions of a population of more than 350 million by the year 2000 were common in the early 1960s. As with the extreme forecasts in the 1930s of a population of 160 million by 1980, these latter prognostications will undoubtedly be proven incorrect. This section first considers some of the issues involved in making population projections, next discusses the Census Bureau's current projections, and then examines the prospects for zero population growth in the U.S.

1. PROJECTIONS AND PREDICTIONS

Since the time of Malthus, forecasts of future population have been made, and not a few have been proved wrong. Erroneous forecasts are made because demographers base their projections on current human behavior when they make their calculations. Demographers of the 1930s had no way of predicting the dramatic rise in fertility which produced the "baby boom." On the other hand, a projection made in 1938, although missing the population size for 1975, predicted the total fertility rate to be 1.7 children per ever-married mother—right on target!

After their failures of the 1930s and 1940s, demographers became more cautious and ceased to treat their projections as "predictions" of the future size of the population. The distinction between a projection and a prediction is an important one. A projection calculates the future population under clearly stated assumptions about future demographic behavior, but says nothing about whether those assumptions are likely to hold true. A projection cannot be wrong, because it is the necessary mathematical outcome of the chosen assumptions; the assumptions on which it is based can, of course, turn out to be wholly incorrect. Makers of predictions, on the other hand, try to select the projection which seems most likely to occur.

Since the 1950s the Census Bureau has periodically made several projections of the future population, based usually on alternative assumptions about fertility. To make policy, of course, both Congress and the Executive Branch would prefer to have a single reliable prediction rather than several alternative projections with no basis for choice of the most likely. Mr. Elmer Smith, Associate Commissioner of Social Security for Program Policy and Planning, discussed the use of projections in making Social Security policy:

Such projections are not—and cannot be considered to be—exact predictions of future experience. However, when revised periodically to reflect changes in experience and interpretation, they can provide information that is essential for making informed policy decisions.

Users must be careful in deciding which projection to use for a prediction. The "average" projection based on the intermediate assumptions will not always be the most likely or the most useful one. Mr. Jacob Siegel, senior demographic statistician at the Census Bureau, suggested that when it would be costly to society to under-

estimate the population, policymakers should choose the high projection. Conversely, if it is costly to overestimate, the low projection should be chosen.

Certain kinds of projections represent more accurate predictions than others. In general, the larger the area and size of the population, the more reliable the projection. More important, whenever fertility—the least predictable demographic variable—does not enter the calculations, one can be more confident of the relative accuracy of the projected figures as predictions. Thus, for example, it is easier to determine the size of the elderly population fifty years in the future than the number of births in the same year. The elderly of the future have already been born, and future mortality rates can be estimated with greater accuracy than can future fertility rates.

2. CENSUS BUREAU PROJECTIONS

The current official Bureau of the Census projections of the future U.S. population that are shown in figure 1 are based on the population and age composition enumerated in the 1970 Census, as well as on assumptions about age-specific fertility, mortality, and migration rates. Projections made in this way are more realistic than if the net growth rate alone were projected into the future. For example, in the early 1980s the proportion of young adults in the population will be quite large, as the "baby boom" generation reaches adulthood. Even if fertility rates remain low, the number of births is projected to increase, in an "echo" of the original "baby boom." This echo effect appears in all the Census Bureau projections, regardless of the fertility assumption used, because of the current age structure of the U.S. population.

a. Assumptions

The current Census Bureau projections, which were made in 1977, incorporate three alternative assumptions about fertility but only one assumption each about immigration and mortality. Net legal immigration to the U.S. is assumed to be 400,000 per year, the level set by law. As to illegal immigration, Mr. Manuel D. Plotkin, Director of the Census Bureau, told the Committee: "No component of illegal migration is assumed for the simple reason that there are currently no reliable data on the annual net illegal migration flows to the Nation, and no sound basis for making assumptions about the future."

Similarly, alternative assumptions are not made about mortality rates. Mr. Plotkin told the Committee that:

Our most recent set of national projections incorporated the declines through 1976 and projected gradual future declines in mortality which would increase the life expectancy by 2050 from 69.1 to 71.8 for males and from 77.0 to 81.0 for females.

Some people assert that future discoveries will dramatically lengthen life expectancy in the near future, but there is little factual basis for such optimism. Dr. Robert N. Butler, Director of the National Institute on Aging, told the Committee that, despite historical increases in life expectancy, there is no evidence that life span (maximum potential longevity) has ever increased or that it will increase in the near future.

The Bureau of the Census makes no single assumption regarding future fertility. To provide a range likely to encompass future trends, three alternative sets of assumptions about completed family size have been used. The high projection (Series I) assumes a completed family size of 2.7. The intermediate (Series II) and low (Series III) projections assume 2.1 and 1.7 children per woman, respectively. For each series, fertility is assumed to move gradually from the 1977 level of 1.76 children per woman to the ultimate specified level over a transition period, after which it will remain at the specified level.

b. Numerical Results

Table 1 shows the population and growth rate trends for each projection. Since the assumptions about mortality and immigration are the same for each series, any variations in future population size are necessarily the result of differences in the assumed level of fertility. Although the differences between the three series before 2000 are relatively small, cumulation of the small differences in fertility behavior produces huge differentials by the year 2050.

TABLE 1.—PROJECTIONS OF THE U.S. POPULATION: 1980-2050

	Series I (TFR=2.7)	Series II (TFR=2.1)	Series III (TFR=1.7)
Population (millions):			
1980.....	224.1	222.2	220.7
1990.....	254.7	243.5	236.3
2000.....	282.8	260.4	245.9
2010.....	315.2	275.3	250.9
2020.....	354.1	290.1	253.0
2030.....	382.8	300.3	249.3
2040.....	438.0	308.4	241.1
2050.....	488.2	315.6	231.0
Growth rate (percent):			
1980.....	1.2	0.9	0.7
1990.....	1.2	.8	.5
2000.....	1.0	.5	.2
2010.....	1.2	.6	.2
2020.....	1.1	.4	.0
2030.....	1.1	.3	-.3
2040.....	1.1	.2	-.4
2050.....	1.1	.2	-.4

Source: U.S. Bureau of the Census, "Projections of the Population of the United States: 1977 to 2050," Current Population Reports, Series P-25, No. 704. (TFR—total fertility rate.)

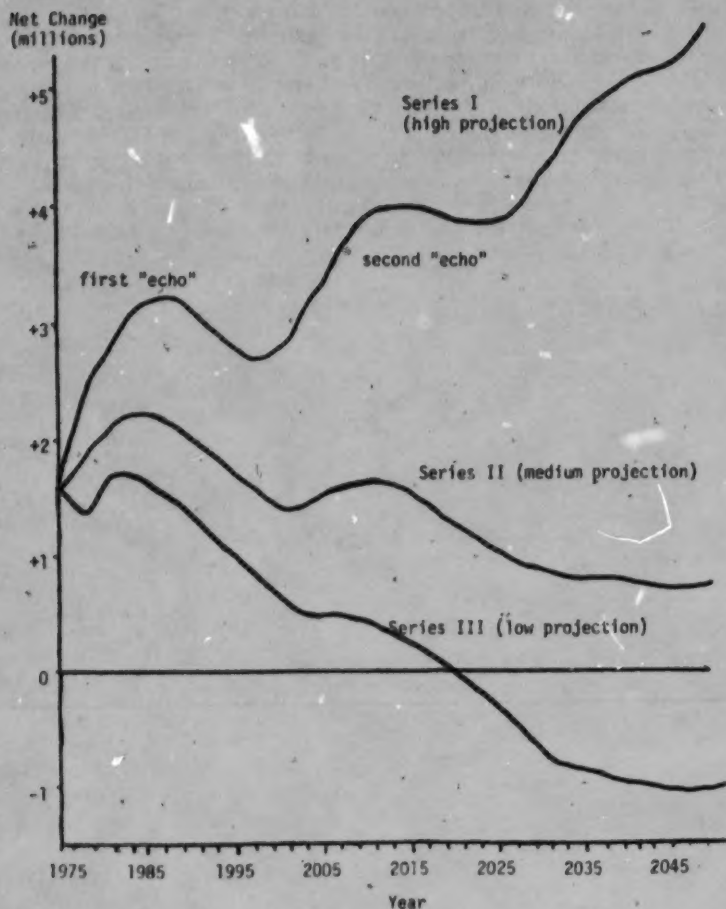
For example, the Series I population is more than twice that of Series III in 2050 (257 million larger) yet the difference in fertility between Series I and Series III is only one child per woman. Even the effects of a difference of 0.4 children are substantial; by 2050, the Series II population exceeds that of Series III by 85 million. These projections illustrate the extent to which apparently small differences in one demographic variable, in this case fertility, can significantly affect future population size.

The projections also show the momentum for population growth which results from the current young age structure in the United States. Although the completed family size of 2.1 children in the Series II assumption means replacement fertility—that is, each generation is only replacing itself with a new generation of the same size—the annual growth rate in the Series II projection increases to 0.9 percent during the 1980s and then declines slowly to 0.2 percent by 2050. (Continuing growth in Series II after 2050 is due entirely to the assumed legal immigration of 400,000 per year.)

This short-run momentum for growth exists largely because of the high proportion of women born in the 1950s "baby boom" who will be in their childbearing years over the next two decades. For instance, the number of women age 20 to 29 increased by 4 percent between 1975 and 1976 and is projected to increase another 6 percent by 1980. Even in the Series III projection, which assumes below-replacement fertility, the population would increase 13 percent by the end of the century. Only after 2010 would an excess of deaths over births produce a natural decrease. However, continuing net immigration would then keep the population growing for another decade. Not until 2020 would net legal immigration be too low to offset the sizable natural decrease resulting from continued low fertility and the older age structure that would then exist. Figure 8 shows net population change in the three Census Bureau projections and illustrates the "echo" of the "baby boom" which occurs in each.

FIGURE 8

Population Projections, Annual Net Population Change: 1975-2050



Source: U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 704, 1977.

The relative contribution of natural increase and net legal immigration, respectively, to future growth will depend on which projection series proves to be the most accurate. Under Series II, with

replacement fertility of 2.1 children per woman, immigration becomes responsible for all growth after several generations. As mentioned above, in Series III, net immigration contributes a larger and larger proportion of population growth until 2020 when natural decrease is so large that it can no longer be offset by net legal immigration. Only in Series I does natural increase retain its historic importance as a contributor to population growth. Thus, if fertility remains near its present low levels, the United States will witness a growing proportion of immigrants in its population. In the 21st century the U.S. may once again become a nation of immigrants in which the principal population issue is the assimilation of new citizens from other cultures.

3. CHOICE OF A PROJECTION

To reiterate, all three of the Census Bureau series are projections and not predictions. They are based on defensible, though different, sets of assumptions and do not pretend to predict the future. Mr. Plotkin, after explaining to the Select Committee the assumptions used by the Bureau of the Census, added:

The extensive discussion about the assumptions which go into our projections is intended to underscore an important message: demographers are wary of precise prophecies and devote considerable effort to reviewing and testing their assumptions. Projections are the outcome of this process, and valuable guides for planning so long as the limitations are kept in mind, as well as the alternative patterns of growth and change.

Users of Census Bureau projections must exercise judgment in deciding which projection provides the most plausible prediction. Analysts choosing Series I cite the theories of Dr. Richard Easterlin of the University of Pennsylvania and others who have forecast a new baby boom in the 1980s due to the expectations of improving economic conditions for young adults. The proponents of Series II note that current surveys of childbearing plans indicate that the replacement fertility level of 2.1 children per woman will prevail in the coming years. However, because the total fertility rate is now well below replacement level, Series III projections which assume 1.7 children should not be dismissed. Some demographers believe that current patterns of women's labor force participation and delayed marriage will continue and that the low fertility rate used in Series III therefore is appropriate.

It is important to note that these projections do not deal with possible annual variations in birth rates, such as those due to transitory changes in economic conditions. For most purposes, it is not important to predict year-to-year fluctuations around the trend, because they do not have much social impact. However, five-to-ten-year or even longer swings in fertility away from the trend might call for substantial social adjustments, as did the 30-year cycle of the "baby boom" and "baby bust." Demographers have as yet had little success in forecasting such swings. Periodic revision of projections, however, should offer policymakers some guidance in dealing with such fluctuations.

Some analysts contend that none of these Bureau or the Census projections is appropriate for use as a prediction of future population size. Among the critics are those who forecast that an imminent breakthrough in disease control would require different mortality assumptions. Indeed, the Census Bureau assumptions with respect to that variable may well be found to have erred on the conservative side.

The most significant difference between Census Bureau projections and those made by other analysts stems from the failure of the Bureau to include illegal immigration in its calculations. One alternate projection by Zero Population Growth, Inc. assumes illegal immigration of 800,000 per year in addition to legal immigration of 400,000 and continuing low fertility and mortality. Under these conditions, the population would reach 325 million in 2025. Omitting the illegal immigration component, it would reach only 274 million in that year.

4. CONCLUSIONS

In spite of some mass media statements to the contrary, the United States has not attained zero population growth. Despite the current below-replacement total fertility rate of 1.76, our population will continue to increase for many years because of the young age structure and net immigration. Owing to the baby boom, the U.S. now has a relatively high proportion of women in the prime childbearing ages and a resulting momentum for growth that is independent of fertility, mortality, or immigration rates. Over several decades, of course, persistent below-replacement-level fertility would reverse population growth, but even a fertility rate of 2.1 children per woman will never result in zero population growth as long as there is positive net immigration.

C. POPULATION GROWTH: PRO AND CON

How population growth affects the well-being of society has been discussed since the time of Malthus. Today, most analysts would agree that population growth ultimately must cease, because infinite growth in a finite world is an impossibility. They disagree strongly about the meaning of "ultimately," however. Some claim that population growth can continue for thousands of years because, when existing resources run low, new sources and substitutes can be found. Others argue that population growth must cease within centuries. The Club of Rome holds that population and economic growth must cease almost immediately to assure that present resources can be eked out to support the current world population. A report of the Select Committee on Population, *World Population: Myths and Realities*, analyzes these arguments for and against continued global population growth.

The narrower question of the advantages and disadvantages of further United States population growth has received considerable attention during the last decade. Organizations such as Zero Population Growth, Inc. have advocated policies and programs to achieve cessation of U.S. population growth as soon as possible, and other groups argue for an immediate end to growth or even for the virtues of gradual population decline. On the other hand, others contend that U.S. population growth should be accelerated because continued slow population

growth will entail social and economic stagnation. The Commission on Population Growth and the American Future examined this issue and took an intermediate view. In 1972, after analyzing the consequences for the U.S. of the 2-child versus the 3-child family, the Commission concluded that, "We find no convincing argument for continued national (population) growth."

The Select Committee on Population has not examined in detail the arguments for and against further U.S. population growth, although testimony before the Committee has touched on some aspects of this question. These pages first discuss the conceptual issues and then consider some of the economic arguments for and against population growth which the Committee heard.

1. SETTING POPULATION GOALS

Deciding whether and when the population should stop growing would be easier if there were a clear-cut definition of the optimum population for the United States. Unfortunately, despite debate for many decades, there is no consensus as to how an optimum U.S. population size should be determined. One proposed criterion, perhaps the easiest to quantify, is a population size which maximizes per capita income.

A more sophisticated objective, but one which is much more difficult to measure, is to maximize per capita well-being as measured, for example, by a "quality of life" index. This might include, in addition to per capita income, some consideration of international political power, the value of natural scenic beauty, the benefits of leisure, and the absence of crowding, to mention only a few possibilities.

The seemingly simple criterion of per capita "well-being" fails, however, in the difficult task of measuring the value of life. Individual American families often illustrate this difficulty as they make their choices of family size. Many parents of two children knowingly choose to have a third child, even though per capita income within the family is certain to decline after the birth of the third child. Obviously, parents must feel that benefits are brought by the third child that are not measured by resources per capita. Furthermore, the birth of the third child adds to the family (and to society) a new person whose rights and well-being must be considered. How to assess the well-being of individuals and generations not yet born is an issue as yet unresolved.

Even if there were some agreement about a target size for the U.S. population, citizens would not necessarily agree on whether that goal should be attained immediately or at some time in the future. Some Americans argue that the population should stop growing immediately because the current population size is already at or above an optimum. Yet, despite current below-replacement fertility (under 2.1 children per woman), the U.S. population now has a large momentum for growth. Even if fertility fell as low as in the Series III projection of the Census Bureau—that is, 1.7 children per woman—natural increase of the population would not end for some 30 years, and population growth would continue even longer due to immigration.

To maintain the U.S. population at its 1978 level, the total fertility rate would have to fall even further below replacement level for the

next 20 years, to 1.2 children per woman. It would next have to rise to 2.8 for a time and then fluctuate below and above the replacement level for centuries. Although such pronounced swings are not likely, they would entail great social disruptions if they did occur, because of their effects on the relative sizes of generations. Dr. Thomas Espenshade, associate professor of economics at Florida State University, summed up some of these timing issues in testimony before the Committee:

It is probable that a very abrupt attainment of stationarity would have a serious disequilibrating effect in the short and intermediate run, but would have a smaller size than the ultimate stationary-stable population achieved by a more gradual transition. Thus, we need to know more not only about the costs and benefits of alternative ultimate population sizes, but also the costs and benefits of alternative paths to population stationarity as well.

Much of the discussion of the effects of a given population size, or of the different paths to a given population size, focuses on the changes in age structure of the population which would come about with the changing growth rate. It is well known that a fast-growing population with high fertility rates has a younger age structure than a slow-growing population. Some of the consequences of changes in the age structure of the population are discussed in Chapter II where the effects on society of the "baby boom" and "baby bust" are analyzed. The rest of this chapter discusses some of the economic consequences of different population sizes and growth rates.

2. ECONOMIC CONSEQUENCES

Economists agree that, since labor is one of the major inputs to production, rising population and labor force growth rates will raise the growth rate of the total gross national product (GNP). They disagree, however, about what will happen to *per capita* output, because it is unclear how much investment will accompany the labor force growth. If capital does not grow commensurately with the labor force, less capital per worker will be invested and productivity may fall. In addition, the supply of natural resources necessary for production may be affected by population growth.

a. Investment

To determine the effect of population growth on investment, economists have analyzed, first, links between population and investment through savings. Economists have long assumed that high fertility and the associated young age structure of the population would lead to low rates of saving, both private and government, because of high immediate consumption needs. Dr. Espenshade reported to the Select Committee, however, that the scanty evidence available so far does not support this hypothesis unambiguously.

The effect of population growth on investments in "human capital" is even more difficult to assess. Dr. Joe Wray of Harvard University told the Committee that children in large families have poorer health and survival prospects, lower measured intelligence, and lower educational attainment than children from smaller families. Thus, in the

long run a society with large families may have lower productivity than one with small families. Witnesses disagreed about the importance of these negative aspects of large families for a developed country like the United States and about the extent to which high income can compensate for large family size.

A third relationship which has been studied is that between population growth and the rate of technological innovation. Population growth can foster such innovation and thus stimulate economic growth for two different reasons. First, the pressure of a growing population against constant resources may force the development and adoption of new technologies, so that productivity and living standards can be maintained. Second, larger populations may permit more creativity and exchange of ideas. Dr. Julian Simon of the University of Illinois testified that:

... in the long run the most important impact on population size and growth is the effect of additional people upon the stock of useful knowledge that is employed in the production of goods and services. This positive effect is large enough in the long run to dominate all the negative effects of population growth.

Basing his discussion on theoretical factors, simulation models, and empirical work which has failed to confirm any negative economic effects of population growth, Dr. Simon claimed that a larger population results in higher per capita income within 50 years. Since creativity has not yet been directly measured, however, he found only indirect support for the hypothesis that population growth fosters innovation.

A fourth way in which investment is affected by population growth is through aggregate demand. Some analysts see rapid population growth accompanied by household formation as a stimulus to residential construction, which may in turn produce an investment and employment boom. The current maturing of the "baby boom" generation will indeed produce a growing demand for housing. Members of this generation have delayed both marriage and childbearing, but they have formed independent households at a rapid rate.

The early 1980s will bring a peak of new household formation, with almost 1.5 million households added each year and a strong demand for both new and existing housing. Whether this household formation will produce a national investment boom remains to be seen. Most of the evidence on the relation between growth in households and other investment deals with shifts in the geographic location of economic activity rather than aggregate national trends.

In the 1940s, there was much commentary attributing the stagnation of the 1930s to a slowdown in population growth. Dr. Espenshade summed up current thinking on the subject as follows:

I think the general consensus of the economic demographic community, in hindsight anyway, is that the causal mechanism was just the reverse. The reason the birth rate was low was because of the economic insecurity that permeated the economy rather than vice versa.

b. Natural Resources

In addition to capital and labor, a determinant of GNP is the wealth of natural resources (such as land, air, water, raw materials, and energy) with which capital and labor must work. If population growth leads to faster consumption and depletion of these resources, the prospects for continuing growth in GNP are impaired. There is considerable disagreement about the extent of resources available to the United States. Pessimists would say that no resources are renewable, that ultimately they will all be used up, or polluted to such an extent that they are unusable, and life will inevitably be blighted. Most argue, however, that though some resources such as petroleum deposits are clearly finite, there are renewable resources such as solar energy with which a certain economic output can be sustained indefinitely.

Optimists believe that natural resources are essentially limitless and that when current resources run low, new sources will be found, such as mineral deposits or new technologies. An intermediate view is that natural resource limitations have been overcome by investments in the past and that for the foreseeable future the prospective population can be supported, although some adjustments in prices and uses will surely take place. Dr. Simon pointed out to the Select Committee that prices of natural resources have fallen continuously over history; thus scarcity, as measured by price, has decreased rather than increased with economic growth.

c. Per Capita GNP

The net effect of population growth on per capita GNP is not clear, because of the divergent impact of the forces discussed above. Dr. Espenshade extended the findings of the 1972 Commission on Population Growth and the American Future (that there is no convincing argument for a larger population) by concluding that there is also no convincing economic argument against further population growth:

Given the current state of theory and empirical analysis, a population policy based on a hypothesized significant increase in per capita consumption (as a result of the attainment of a stationary population) is unwarranted. While there seems to be little doubt that increasing growth of population leads to diminishing returns to fixed factors and a dampening of the aggregate capital-labor ratio, there are a variety of interactions about which we know comparatively little.

Thus, in contrast to Dr. Simon's belief, noted above, that the net effect of population growth on per capita GNP is positive, Dr. Espenshade's assessment is that no conclusion can yet be drawn about the effects of population growth.

The Select Committee has not come to any conclusion about the effects of population growth on per capita GNP in the United States. It seems, however, that most experts agree that the population growth which actually occurs in the future will not have major long-run macroeconomic effects for the U.S., compared with the impact of other influences on economic growth.

3. CONCLUSIONS

The issue of when United States population growth should end remains unresolved. Any goal for U.S. population size should take into account economic, social, psychological, political, and international aspects of well-being, among others. The size and growth of the United States population is linked to its composition. As the following chapter shows, certain consequences of age structure of the U.S. population are among the most salient demographic issues today.

II. CHANGING AGE COMPOSITION OF THE UNITED STATES POPULATION

The relative numbers of the population in various age groups raise important questions that are not related to the size of the total population. Recent and prospective changes in the age composition of the American people present clear policy implications for child care, education, labor markets, the elderly, and fiscal policy.

A. AGE COMPOSITION OF THE NATION

Today there is great concern about the "aging" of the U.S. population. The number of people age 65 or older (the "elderly") is growing while elementary and secondary schools are closing for want of students. Only 25 years ago almost half our population was under 25, and many predicted that this proportion would increase. What transpired between 1953 and 1978 to change us from a nation getting younger to a nation growing older?

1. HOW DOES A POPULATION AGE?

A population is said to be aging if the median age is rising and to be getting younger if the median age is falling. (The median age is that point at which exactly half the population is younger and half is older. If a population contains 99 members whose ages range from one to 99 years, the median age is 50.) Although populations may age as people live longer, in fact it is fertility change that is the principal ingredient in the aging process of a population. When fertility declines, the proportion of children in the population declines and hence the median age increases.

Somewhat surprisingly, declining mortality often results in a slightly younger population. Historically, greater reductions in death rates have occurred at younger ages than at older ages and thus lowered the median age as the number and percent of younger people increased. Since about 1960, death rates among people under age 40 have been so low in the U.S. that any further reductions in mortality for these ages would be small.

Accordingly, falling mortality has resulted recently in a slight increase in the median age of the U.S. population. The magnitude of such changes should not be overstated, however, as the change in our age structure due to mortality improvement has been quite small. Only in rare cases of large, sudden rises in mortality for certain age groups do the age-composition effects become significant, as when France and the Soviet Union suffered massive losses of young men in both World Wars. The U.S. is fortunate in not having suffered any such demographic disasters.

Immigration also affects the aging of a population. Because immigrants have been disproportionately young, immigration to the U.S. has helped slow down the aging process during this century. Continued immigration can be expected to have such effects in the future, if international movement continues to be concentrated among young adults.

Finally, the appearance of particularly large generations—for example, the “baby boom”—has a significant impact on the median age of the population. Changes in age composition are to a considerable extent dependent on the stage in life of that particularly large generation, whose disproportionate size is the result of increases in fertility in the past.

The U.S. median age climbed throughout the first half of the 20th century, from 22.9 years in 1900 to 30.2 in 1950. It then decreased until about 1970 because of the baby boom and the growing proportion of children in the population. Since then, with declining fertility, the median age has once again resumed its long trend upward, reaching 29.4 in 1977.

The median age, however, can conceal significant variations in age composition. More descriptive detail may be obtained by calculating the percent of the population in various age groups. One conventional division is 0-17, 18-64, 65+, as shown in table 2.

TABLE 2.—AGE COMPOSITION OF THE U.S. POPULATION, ACTUAL AND PROJECTED: 1900-2050

Year	Median age	Percent of the population			Dependency ratio: (0-17 plus 65+)/ (18-64)
		0-17	18-64	65+	
1900	22.9	40.3	55.6	4.1	79.9
1910	24.1	38.0	57.7	4.3	73.4
1920	25.3	37.3	58.1	4.6	72.1
1930	26.5	34.9	59.7	5.4	67.6
1940	29.0	30.5	62.7	6.8	59.6
1950	30.2	31.1	60.8	8.2	64.5
1960	29.5	35.8	55.0	9.2	81.8
1970	28.1	34.0	56.2	9.8	78.0
1977	29.4	29.5	59.6	10.8	67.6
Projection:					
1980:					
I	29.9	28.5	60.4	11.1	65.6
II	30.2	27.9	60.9	11.2	64.2
III	30.4	27.4	61.3	11.3	63.2
1990:					
I	31.4	29.8	58.5	11.7	71.0
II	32.8	26.6	61.1	12.3	63.5
III	33.7	24.4	63.0	12.6	58.6
2000:					
I	32.5	21.1	57.6	11.3	73.5
II	35.5	26.5	61.3	12.2	63.1
III	37.3	23.1	63.9	12.9	56.5
2010:					
I	31.1	30.0	59.0	11.1	69.5
II	36.6	24.6	62.8	12.7	59.4
III	40.2	20.7	65.4	13.9	52.8
2020:					
I	31.4	31.3	56.0	12.7	78.5
II	37.0	24.6	59.8	15.6	67.2
III	41.7	19.9	62.3	17.8	60.5
2030:					
I	31.2	30.9	55.1	14.0	81.5
II	38.0	24.1	57.5	18.3	73.8
III	43.2	19.2	58.7	22.1	70.3
2040:					
I	30.7	31.1	56.4	12.5	77.5
II	37.8	24.0	58.2	17.8	71.8
III	43.9	18.8	58.4	22.8	71.2
2050:					
I	30.9	31.5	56.2	12.3	78.1
II	37.8	24.3	58.2	17.6	71.9
III	43.7	19.0	58.4	22.7	71.3

Source: Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1970, September 1975; Bureau of the Census, "Projections of the Population of the United States: 1977-2000," Current Population Reports, Series P-25, No. 704, July 1977.

Such a division permits the calculation of the dependency ratio (the number of "dependent" people under 18 and over age 64, per 100 "active" people age 18 to 64), which is roughly the ratio of dependents to potential economic producers.

Despite major shifts in age composition, the U.S. dependency ratio has changed only slightly in recent years. It is important to note, however, that over time the composition of the dependent population has shifted markedly away from children and toward the elderly. In 1900 there were 10 youths under age 18 for every elderly person; by 1977 there were only 3 youths for each person 65 and over, a solid indicator of the "aging" process taking place in the U.S.

2. CONSEQUENCES OF FUTURE AGE COMPOSITION

Because of the uncertainty surrounding future patterns of fertility, it is difficult to forecast with confidence the median age of the population in 1990 or 2000—except to say that barring a new "baby boom" it will be older than at present. Should fertility remain well below replacement, the median age at the turn of the century could be as high as 37; if fertility increases to 2.7 children per woman, the median age will rise only to 32.5. Table 2 shows the variation in median age and dependency with each of the three Census Bureau projection series.

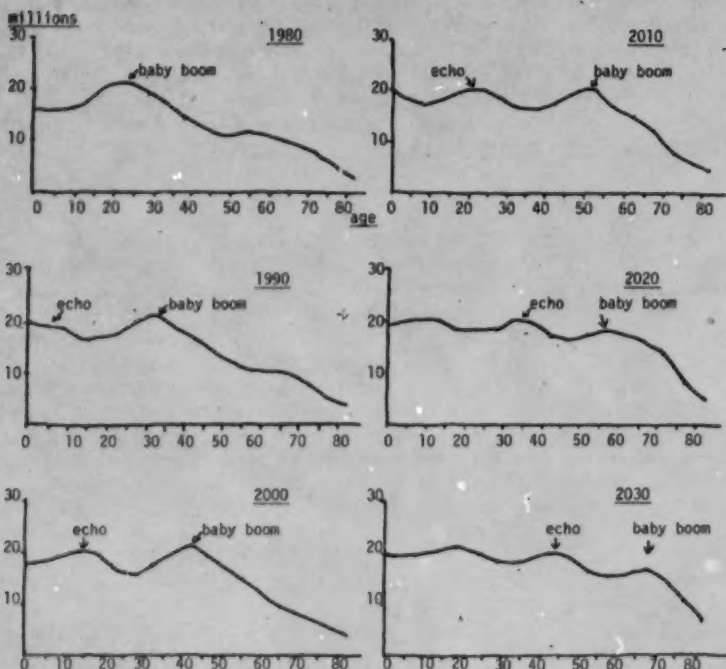
The college age population (age 18 to 24) will gradually fall as a proportion of the total population, from 13 percent today to less than 10 percent by 2000. On the other hand, the 35 to 44 age group (the prime-age labor force group) will increase from 11 percent today to close to 15 percent of the population by 2000. The elderly population will grow gradually until 2010. After that year, the numbers will soar to over 50 million by 2030, when the elderly will constitute between 14 and 22 percent of the population.

The post-war "baby boom," together with the dramatic drop in fertility in the 1970s, have had a tremendous impact on the age composition of the Nation. More important perhaps is the impact of this change on the lives of Americans now and for the next 70 years. The "baby boom" generation has been likened to a watermelon swallowed and then gradually digested by a boa constrictor. One can visualize the passage of this generation through the life cycle in figure 9. With reference to the lasting effects of the baby boom, Mr. Manual D. Plotkin, Director of the Census Bureau, testified:

During the next several decades, the major demographic factor will continue to be the aging of the baby boom population. The people born during the peak of the boom, the 1950s and early 1960s, will continue to be the largest population group throughout most of their lives. As this large group passes through each of these ages, the institutions that deal with population of particular ages will undergo the strain of rapid expansion and a decade or two later the often more painful task of precipitous retrenchment.

FIGURE 9

Future Population Size by Five-Year Age Groups,
Census Bureau Series II Projection



Source: U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 704, July 1977.

The "baby boom" is of tremendous importance, not only because of its own absolute size, but also because of its size in relation to the generations immediately preceding and following it. This is the only time in U.S. history that a generation of people has been greater in numbers than those a little older and those a little younger; it is an unprecedented "bulge" in the U.S. age structure.

The generation born during the 1930s has been labeled the "good times" generation. There were fewer people born in the 1930s than in either the preceding or the following decade, and they, too, are thus unique in U.S. demographic history. By virtue of their small numbers, the 1930s cohort has experienced relative abundance throughout life. For them, for example, there were no overcrowded schools. Later,

upon their entry into the labor force, the individuals of this generation were in short supply; thus they commanded high wages and advanced rapidly as their more numerous elders retired.

The "baby boom" generation faces the opposite situation. Rather than experiencing relative abundance, the members of the "baby boom" generation may well experience relative scarcity. They have already been through traumatic overcrowding in elementary and secondary schools and higher education. Passage of the "baby boom" generation through later stages of the life cycle will pose additional problems for society, contributing first to a large number of workers entering the labor force and later a bulge in the number of retirees.

This chapter discusses the effect of changes in the age composition on policy choices concerning child development, education, the labor force, the elderly, and fiscal issues such as those of the Social Security system. Changes in age composition that result from fluctuations in fertility have other far-reaching effects—on crime, for instance—that will be discussed here only in passing.

B. IMPLICATIONS FOR CHILD CARE

Since 1965, despite declining fertility, the number of preschool children (i.e., under age 6) with mothers in the labor force has increased 65 percent. The reason for this is the rapidly growing labor force participation of women, which is discussed later in this chapter. In 1977, 41 percent of mothers with preschool children worked, compared to 20 percent in 1965. These children are being cared for under vastly different conditions from those a mere 25 years ago, when most mothers of young children were not in the labor force. Who takes care of these children? What is the quality of their care?

In 1965, 62 percent of preschool children with mothers in the labor force were cared for by a relative, usually in the child's home. Thirty-one percent were cared for either by a baby sitter in the child's home or in a private family day care home. (In a family day care home, a woman cares for the children of a few working mothers and often her own children as well.) Only 5 percent attended a regular, licensed day care center. A few young children were left to care for themselves, but fortunately they represented less than one percent of all children of working mothers.

Within the preschool age group, the infants and toddlers should be differentiated from those age 3 to 5. About half the latter were in nursery schools as of 1976. However, no data are regularly collected on the care of younger preschoolers, so the demand for care for this group is more difficult to assess. As the number of preschool children with working mothers grows, the quality as well as the availability of day care will become more crucial questions. At hearings of the Select Committee, Dr. Isabel Sawhill, director of the National Commission on Manpower Policy, agreed with Representative James H. Scheuer that more research is needed on the effects of different types of care on young children.

Dr. Sandra Hofferth, research associate at the Urban Institute, told the Committee that parents are concerned about the quality of child care, and a recent study indicated that parents are satisfied on the whole. Only one-quarter of these parents would like to change

to another form of care, some undoubtedly because of natural changes as their children grow up. However, Dr. Hofferth suggested that parents may report satisfaction with the care they are using because they have no alternatives. "Parental satisfaction may not reflect their true difficulties in obtaining care for their children," she concluded.

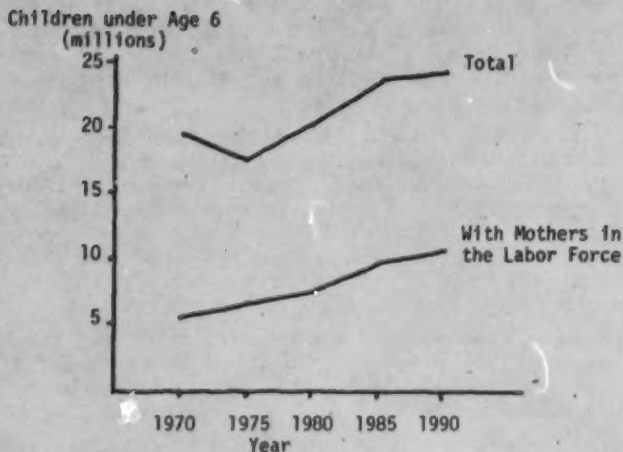
In addition, Dr. Sheila Kamerman, associate professor of social policy at Hunter College, told the Select Committee that older children also need care:

We can assume that there is both need and significant demand for child care services among parents . . . of school-age children, at least through ages 8 or 9. But so far an accurate quantitative assessment is impossible.

Two factors indicate that the number of children of working mothers is likely to increase in the future. First, in the 1980s, the number of women in their childbearing years will be at its peak (again, the "baby boom" generation of the 1950s and early 1960s). If their fertility follows the Series II assumptions of the Census Bureau, the number of children under age 6 will increase by 26 percent between now and 1990. This is an echo effect of the original "baby boom," as shown in figure 10.

FIGURE 10

Estimates and Projections of Preschool Age Children with Mothers in the Labor Force, 1970-1990, Assuming Census Bureau Series II Fertility



Source: Based on Data from Sandra Hofferth, Testimony before the Select Committee on Population, May 25, 1978.

Second, today 34 percent of all preschool age children have mothers who are in the labor force. Dr. Hofferth projects an increase to 43 percent by 1990, using the Series II fertility projections of the Census Bureau. The actual number thus would climb from 6.3 million to 10.5 million. She added, moreover, that "slight variations in fertility rates should not affect the overall prediction of greatly increased need for child care services by 1990, as long as the present relationship between childbearing and employment remains the same."

Predicting what type of child care will be most in demand in the future is difficult. If current arrangements are extrapolated, Dr. Hofferth estimates that the number of children of working mothers in day care centers and in nursery schools will increase by two-thirds, from 344,000 in 1977 to 575,000 in 1990. Most children, 6.5 million, presumably will still be cared for either by relatives or by another person in the child's home.

These estimates assume no change in usage rates for the next decade. But changes will occur, some of them due to demographic factors. Single parents are more likely to be in the labor force and to use child care away from home than their married counterparts. The number of families headed by one parent (usually the mother) has increased tremendously in recent years, and this trend shows no sign of abating. Dr. Sawhill commented:

Between 1970 and 1975 alone, the proportion of all children under 18 living in single parent homes rose from 12 percent to 17 percent and most of this increase can be traced back to rising marital instability. Nine out of ten of these children live with their mothers, and 44 percent of these female-headed families are poor.

Dr. Paul Glick, senior demographer at the Census Bureau, testified that one-third of all marriages are expected to end in divorce and that one-third to one-half of all children born in the 1970s are expected to spend at least a few years in a single-parent family before they reach age 18. Yet Dr. Glick is optimistic about a possible future decline in the divorce rate, as marriage rates taper off.

Interestingly, the trend toward smaller families should *not* result in less demand for day care centers. Dr. Hofferth noted:

Since parents can better afford tuition or fees if they have only one or two children, we might expect an increase in the use of centers and licensed homes to result from declining family sizes.

Public policy cannot ignore the dramatic developments presently taking place. Dr. Sawhill told the Committee that the right of every woman to seek gainful employment must be assured; on the other hand, "... we need to be concerned about what will happen to children as fewer and fewer of them can count on the full-time care of one parent." Part-time work and flexible scheduling of hours would help mothers resolve the child care dilemma, but most would still have to rely on day care of some type. Dr. Hofferth testified that:

The goal of concerned policymakers should be to facilitate the maximum of choice and quality (of day care) with the minimum of cost and red tape.

Dr. Sawhill has suggested that public policy initiatives should support:

... greater male-female sharing of housework and child care, with the division of responsibilities reflecting the true preferences and abilities of the individuals involved rather than being culturally predetermined.

Dr. Sawhill also suggested that greater use of flexible and part-time working hours be explored as a method of easing the child care dilemma before massive organization of other forms of child care is undertaken by society.

Many mothers who wish to work are deterred by the lack of reasonably priced, reliable child care. Provision of such care would help these mothers and could have the added benefit of reducing the wel-

fare rolls to the extent that welfare recipients would thereby be enabled to earn their own living. Dr. Sawhill recommended further improvement of income tax credits for child care services.

Several witnesses suggested that society recycle resources which are not now fully utilized in order to meet the demand for child care. Many school buildings are now standing empty. Mrs. Katherine Eisenberger, director of the American Association of School Administrators' Population Project, testified about ways to meet the growing demand for extended care services for children:

Ten-to-twelve-hour-nursery day care services for pre-schoolers of working mothers will become a high priority need. In some areas the local schools have provided these services. The anticipated excess space, as well as the location of most school buildings and the readily available personnel, makes the school a logical place to look for these services in the future.

Another underutilized social resource is the growing elderly population, particularly the so-called "young-old," those age 65 to 74, many of whom are in good health, alert, and active. Some who no longer seek full-time work might find meaningful and remunerative employment in caring for children.

With the growing demand for child care, chains of such centers are already cropping up throughout the Nation, and more can be expected. This rapid growth raises the question of monitoring day care for the protection of the children. Dr. Hofferth suggested in her testimony:

Rather than regulating all care as though it were developmental, it might be desirable to establish minimum standards for various types of care. Parents would then be free to elect the type they prefer.

Many other questions concerning child care remain unanswered. We need to understand better how changing marital, employment, and fertility patterns will produce shifts in the demand for different types of child care; what types of facilities parents prefer; what type of care is best for children; what care is needed for older children after school or during vacations; and the extent to which child care should be left to the private sector or brought within the purview of government.

C. EFFECTS ON EDUCATION

Changing age composition affects the educational system by creating substantial variations both in enrollments and in the size of the pool of teachers. In this section, these variations are discussed, as well as possible policy alternatives for dealing with their effects.

1. THE BABY BOOM AND BUST

During the 1950s and 1960s, U.S. society was dominated by the "youth culture." The 5- to 13-year-old age group (that is, school grades kindergarten through 8) grew from 23 million in 1950 to almost 37 million in 1970. Problems arose in the provision of education: short-

ages of classrooms as well as teachers plagued elementary schools in the mid-1950s; similar difficulties at the secondary level became commonplace in the 1960s as the bulk of the "baby boom" generation entered their teens. The high school age population doubled in size between 1950 and 1975.

By the mid-1960s the college scene had been altered considerably by the arrival of the "baby boom" bulge. The number of young adults (age 18-24) in the population remained stable at 16 million in the 1950s and then rose dramatically to 24.7 million by 1970 and 27.6 million by 1975. Combined with this increase in absolute numbers, the proportion of young adults going to college also grew rapidly. The number of college students grew from 3.2 million in 1960 to over 9 million in 1975.

The problem of teacher shortages, too, has had a demographic dimension. Newly trained teachers in the 1960s came from the small generation born in the 1930s and were therefore in short supply. Policymakers at national and local levels failed to see the coming surge of school children and to expand teacher training in time. Not until the late 1960s was the supply of new elementary and secondary school teachers sufficient to meet the demand.

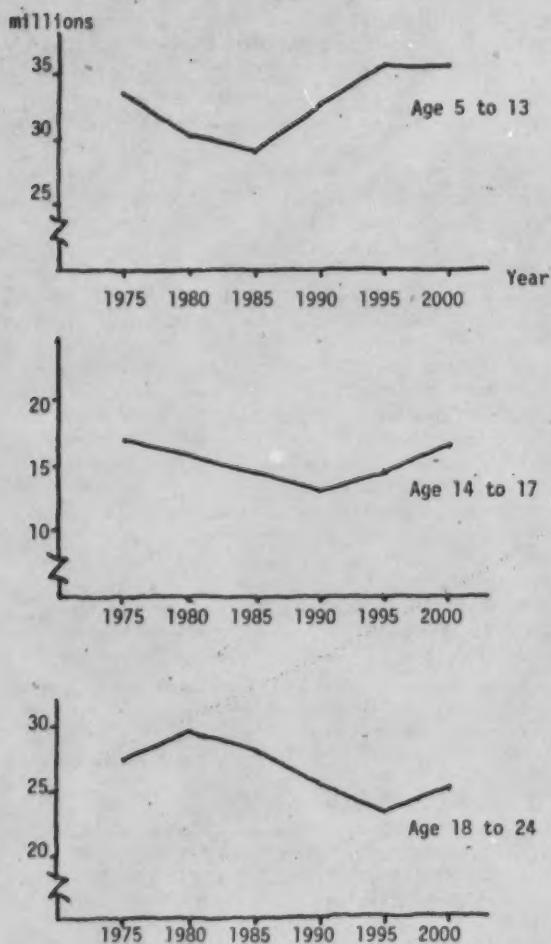
Shortages were not limited to teachers. School rooms and school buildings were also in short supply as school districts were caught totally unprepared for the influx of youngsters entering school. Double and even triple sessions were instituted in many areas, and massive school building programs were accepted by voters with little question.

School planners were apparently unaware of the implications of changing fertility behavior. Few experts thought the "baby boom" would last into the late 1950s and early 1960s, and warnings were not given to school administrators until it was too late. The experience in providing education for the "baby boom" generation emphasizes the necessity of using demographic analysis in planning future education policy.

In looking at the projections of the population age 5-24, in figure 11, one is struck by a recurring pattern. Mr. Plotkin of the Census Bureau commented on that point in his testimony:

FIGURE 11

Projections of School Age Population, 1975-2000,
Assuming Census Bureau Series II Fertility



Source: U.S. Bureau of the Census, "Projections of the Population of the U.S., 1977-2000," Current Population Reports, Series P-25, No. 704, July 1977.

The most notable fact is that each of the three school age groups is going to go through cycles in which the population declines for 10 to 15 years, rises for another 10 years, and then declines again for 10 to 15 years, and finally rises again. Thus, the primary school ages can expect declines between now and 1985, marked gains between 1985 and 1995, further declines from 1995 to 2010, and finally gains after 2010. These same trends will have an impact on the secondary school population and college age populations about 5 and 10 years after they affect the primary ages.

Accordingly, he suggested that flexibility must be built into the educational system, so that changes in fertility do not cause either shortages or excess capacity.

Primary schools have been coping with smaller enrollments since 1970. Dr. Harriet Fishlow, of the University of California at Berkeley's Office of Academic Affairs, told the Committee that the number of children enrolled in kindergarten through eighth grade dropped by 11 percent between 1970 and 1977. However, if the Census Bureau's Series II projection holds true (total fertility of 2.1 children per woman), the number of children age 5 to 13 will increase between 1986 and the end of the century, when elementary school enrollments will once again reach the 1970 level. This future increase in the number of school age children reflects the "echo effect" of the "baby boom" noted earlier. Indeed, a similar, though smaller, echo effect would be noted even if women limited themselves to fertility as low as 1.7 children on the average. In the meantime, however, low enrollments are the norm almost everywhere, qualified teachers are unemployed, and many schools are closed or on the verge of closing.

The circumstances of secondary schools parallel those of the elementary schools, but with an eight-year lag. The number of children age 14 to 17 is still increasing, and there are still moderate increases in high school enrollments as the last of the "baby boom" passes through the teen years. However, the number of youths age 14 to 17 has peaked at almost 17 million and is expected to drop steadily to 12.7 million in 1990. Between 1990 and 2000 the projected "echo generation" will enter high school and increase enrollments to 16 million, about the same as today. Because of the anticipated decline until 1990, however, plans are already being made to close high schools, and job openings are scarce for newly trained teachers.

College enrollments are more difficult to project than school enrollments. Whereas almost everyone attends elementary and secondary school, the proportion of high school graduates going on to higher education has increased over time, but not at a steady rate. College enrollment projections therefore must be viewed with some caution. The number of people age 18 to 24 is expected to increase slightly until about 1981 to a total of 29.5 million, followed by a decline until 1996 when only 22.8 million will be in that age group. Assuming a slight increase in fertility to 2.1 children per woman, by 2000 there should be approximately 25 million people age 18 to 24.

If enrollment rates do not change, the number of college students will be about 9.1 million in 1980, then fall to 8.3 million in 1990 before once again rising to 9.4 million in 2000. Changes in either fertility or in enrollment rates would make these projections inappropriate

for planning purposes. For example, should fertility increase to the Census Bureau's Series I projection assumption (2.7 children per woman) the number of people 18-24 in the year 2000 would be 3.4 million greater than under the Series II assumption of 2.1 children per woman. Should the proportion of people attending college also increase, that too would contribute to larger numbers. Both factors must be taken into consideration.

In the 1950s there was an excess of students and a shortage of teachers and facilities. Today, there is a shortage of students and an excess of both teachers and schools. Today's teachers are numerous, not only because they come predominantly from the "baby boom" generation, but also because they were encouraged to become teachers by the shortages they themselves experienced while in school and by governmental policies to some extent. Many schools which were built to accommodate the "baby boom" school age children are now no longer needed. Policymakers are now pondering how best to turn these plant and personnel resources to more productive use.

2. POLICY ALTERNATIVES

Many educators have suggested ways to alleviate the problems caused for education by demographic change. One simplistic solution sometimes offered for the current and projected problems of education is more babies! A larger school population would no doubt create more jobs for teachers. But consideration of the interests of society in the welfare of these children suggests an alternative approach. There is, for the first time, an abundance of professionally trained personnel and adequate physical facilities. Society has an opportunity today to improve the entire educational system by allowing the decline in the number of students to result in more resources per student. Demographer Lincoln Day recently posed the question:

Will this reduction in the number and proportions of school age children lead to an improvement in educational quality (however one cares to define this), or will it be seized upon, instead, as an opportunity to cut costs and allocate resources elsewhere?

The present mood of the country suggests that the latter is more likely.

Another issue concerns the future of education around the turn of the century. Solutions for disposing of excess education resources today must also consider the projected rises in enrollments within 20 years. Policymakers must balance the cost of unemployed surplus resources today against the cost of building them up later when they will be needed for a larger school population. Witnesses before the Select Committee concurred on the need for better demographic analysis of future enrollments, linked with more responsive and more flexible planning.

Dr. Mary Berry, Assistant Secretary of HEW for Education, addressed the specific issue of empty school buildings and discussed their

potential for use as "one-stop shopping centers of social services." She suggested to the Committee that:

... we add to the responsibilities of the already existing school plant by using education facilities for other social service programs, such as health or recreation.

There is pending legislation, sponsored in the House by Congressman Kildee and in the Senate by Human Resources Committee Chairman Williams, that would dramatically increase our effort here, along the lines of the community education program recommended by the President as part of the administration's Elementary and Secondary Education Act reauthorization proposal.

As noted in the preceding discussion of child care, Mr. Eisenberger also strongly supported using education physical plants more intensively for the provision of such community services as child care centers, health clinics, legal aid offices, teen-age recreation centers, and senior citizen service centers, for example.

A major problem of recycling school facilities is that, as noted above, the demographic evidence points to a return of high enrollments at the end of the century. These increases will occur even if the low fertility assumptions of the Census Bureau are used, although in that event the gains would be smaller. Dr. Berry suggested that:

School systems would be well-advised to go into a holding pattern, and wait for the classrooms now being depopulated to fill once again.

Dr. Fishlow elaborated on this theme, urging school districts to move very cautiously when considering the sale or lease of their educational plant. She suggested that lease arrangements for prefabricated buildings should be investigated; these flexible plants could be moved from place to place whenever needed.

The Select Committee is convinced that, in general, although empty classrooms and schools present a problem currently, school administrators should not be too hasty about eliminating this excess capacity. Enrollments will once again rise. In the interim, many other uses might be made of these buildings, with the proper assistance and encouragement from State and Federal agencies. Admittedly, there are certain obstacles to the alternative use of school buildings. In some cities and States, it may not be lawful to rent or sell such properties. Some buildings may be in such poor condition that repairs may not be warranted; in other situations, buildings may not be appropriate for alternative usages. Nevertheless, it was the general opinion of witnesses heard by the Select Committee that empty classrooms and buildings should be put to use if at all possible, bearing in mind that enrollment numbers probably will fluctuate within the next few decades.

In addition to the problem of unused school facilities, the problem of the unemployed or soon-to-be-unemployed teacher is a major one, both for the individuals who suffer loss of earnings and for the society that wastes their productive capacity. As a long-run response,

Dr. Fishlow suggested allowing one-year certification programs for holders of appropriate bachelor's or master's degrees:

The one year post-BA or MA credential system actually allows both rapid increase and contraction of the supply of new entrants. A person need not make a firm commitment to the field until the senior year, thus one need not predict the job market four years in advance.

For the immediate situation, Dr. Fishlow suggested clearinghouses for employment, including employment outside the profession; and insurance plans designed to subsidize re-training:

At the least, teachers should be advised of the possibility of future employment problems due to projected enrollment changes in their districts and of ways to alleviate the consequences to themselves as individuals.

Another suggestion offered by Dr. Fishlow was federally financed fellowship programs. Most school districts are not financially able to offer sabbaticals to their teachers and this would, in a sense, replace such benefits. As a result, teachers would be able to update their knowledge and perhaps become better prepared for the changing curriculum.

Dr. Berry also expressed concern about the impact of demographic change on school personnel:

Teachers also will require additional help through this period. As fewer entry-level people are able to come into the profession due to job shortages, we all must guard against an ossification of teaching staff currently employed. Teachers want and need continuous in-service training; we should see that it is generally available. We can do this by assuring full access to Teacher Center programs, and by assisting those administering such programs to keep their quality high.

Dr. Berry stressed the high priority that the Office of Education is putting on re-training programs and noted that her office is currently sponsoring such programs.

Several witnesses commented that the slowdown of U.S. population growth has brought to light a new need. Americans have always been prepared to manage growth, but now the Nation is faced with a new challenge—managing decline. Mrs. Eisenberger recommended further research and training in this area, saying:

There is a growing body of literature that seems to suggest that the management and leadership skills required to manage non-growth or decline are markedly different from those of growth.

Dr. Berry concurred and added:

Few district administrators have received training in management of enrollment decline, in how best to allocate staff and resources in periods of demographic change, and in how to put facilities to efficient alternate use as they become no longer needed for school programs. My office is developing an effort to assure the access of administrators to such training and to see that technical assistance in such matters is fully available.

Another issue raised in the Committee's hearings is the possibility of a decline in interest in and support for education as the population ages. As the proportion of elderly people in the population grows, this age group could account for a larger proportion of public outlays, possibly to the detriment of education and other programs for children. Witnesses before the Select Committee expressed concern about this possibility. Mrs. Eisenberger suggested broadening public support for education by including adults in the educational process. She strongly supported the idea of allowing adults to take regular courses alongside young students at all levels of education. She testified:

While the traditional student numbers may grow smaller, a broader spectrum of age groups will be seeking educational services. Programs to help cope with the rigors of mid-life career change needs, rapidly advancing technology, swiftly shifting social values, a volatile and competitive job market, increased leisure time, and greater longevity will be required. . . . Public schools will need to adjust to new demands while still providing services for the young.

Dr. Berry also spoke to this point:

Our effort to create a universal system of lifelong learning is still in the development stage. But our ultimate goal is clear: it is an infusion of education with all aspects of adult life—vocational, civic, social, and creative. We have been served well by our adult education system. The time has come to move beyond that to a society where people in most occupations get time off to go back to school for more training, where retired people have schooling options that relate to their interests, and where adults can develop an awareness and understanding of cultural activities now far removed from their daily lives.

Dr. Berry thus advocated lifelong education for its own sake, regardless of any consequent increase in public support for education.

Dr. Robert Spencer, President of Sangamon State University, Illinois, was somewhat more cautious in his recommendations to the Committee. He urged that it sponsor:

. . . an examination of our national educational priorities in light of the need for sustaining and renewing one of the world's last open, free, democratic governments. . . . We have no source other than an enlightened and educated citizenry from which to draw our future Congressmen and leaders, and other public servants—those who represent us and who govern.

Witnesses unanimously agreed that data needed for proper educational planning are not generally available, particularly for local areas. The Census Bureau projects future population size and composition only at the national and State levels. Thus, local school planners must rely on State-wide projections of future school age population. Predicting future youth population of small areas is very difficult because of unpredictable migration patterns, particularly for young adults with children. Nevertheless, the Select Committee heard testimony that many local planners do not make best use of

the data available from Federal and State agencies and are not trained in demographic techniques. Dr. Fishlow advocated more aid to local areas for projecting enrollments in order to avoid repetition of the planning errors of the 1950s, 1960s, and 1970s.

The Committee was told, also, that it is important to factor in the political dimension when planning for the future of education. Demographers may well advise a local school superintendent of a future drop in enrollments. It does not follow that such advice will be accepted, in light of its political implications. Public agencies are reluctant to admit to any decline in the need for their services, and local pride makes public officials reluctant to concede that growth is slowing or has stopped.

That many non-demographic factors go into planning for enrollments is illustrated in the Sangamon State University situation that Dr. Spencer described for the Committee:

Hardly had Sangamon State University opened its doors in the fall of 1970 than it was faced with reduced enrollment expectations, changed planning strategies, altered schedules for completion, and a perceptible redefinition of its mission.

Clearly, a number of factors—both demographic and non-demographic—enter into planning for the future of education. Every aspect of decisionmaking must be considered. Improved data are vital, but they represent only one of many factors inherent in Federal, State, or local education policy. Furthermore, such planning necessarily needs reviewing and updating every few years.

D. LABOR FORCE CHANGES

The late 1960s marked the transition to adulthood for the first members of the "baby boom" generation. Subsequent years brought a continuing large influx of new workers into the economy. Labor force participation rates for women soared as fertility declined and new economic opportunities opened up for women. The U.S. civilian labor force will increase from 82.7 million in 1970 to 119.4 million in 1990, according to the most recent Bureau of Labor Statistics intermediate projection, which assumes moderate growth. The growth will differ by age and sex, as shown in table 3, and it should be remembered that changes in immigration to the U.S. as well as trends in the economy and the family could substantially affect both the size of the future labor force and its age composition, especially after 1990.

TABLE 3.—LABOR FORCE CHANGES, ACTUAL AND PROJECTED, USING INTERMEDIATE PROJECTIONS: 1960-1990

	[Millions]		
	1960-70	1970-80	1980-90
Total, all ages.....	13.8	21.3	15.3
Ages 15-24.....	7.2	7.2	-1.7
Ages 25-34.....	2.6	11.0	6.4
Ages 35-44.....	0	3.5	10.5
Women, all ages.....	8.4	12.5	10.2
Men, all ages.....	5.4	8.8	5.1

Source: (1) U.S. Bureau of the Census, Statistical Abstract of the United States, 1977, p. 387 (including Armed Forces). (2) U.S. Bureau of Labor Statistics, "New Labor Force Projections to 1990," August 1978 (civilian labor force only).

The growth of the 16 to 24 age group since 1960 especially shows the impact of the "baby boom." In the 1980s, however, the number of workers in this age group will decline, as the "baby boom" generation ages into their thirties. The following discussion first examines recent and projected changes in the age and sex composition of the labor force, then some consequences of those changes.

Recent years have seen unprecedented growth in the number of women entering and remaining in the labor market. Whereas in 1950 only 31.4 percent of all women were in the labor force, by mid-1978 over half of all women were working or seeking work outside the home. The outstanding feature of this exodus from the home to the marketplace is the continuous involvement of married women who previously had low labor force participation rates and high turnover. Table 4 shows the startling growth in the proportion of women who work, particularly married women with preschool children. New female workers have come disproportionately from the younger age groups. The lower participation rates for widows than for divorced and separated women mainly reflect the fact that the former tend to be older than the latter.

TABLE 4.—WOMEN'S LABOR FORCE PARTICIPATION RATES: 1950-1976 (PERCENT)

	1950	1960	1970	1976
All women, age 16+	28.3	34.5	42.6	46.8
Single women	46.3	44.1	53.0	58.9
Widowed women	32.6	29.8	26.4	22.3
Divorced women		71.6	71.5	71.4
Married women, spouse present, total	21.6	30.5	40.8	45.0
With children under age 6	11.9	18.6	30.3	37.4
With children age 6-17 only	28.3	39.0	49.2	53.7

Source: U.S. Bureau of the Census, Statistical Abstract of the United States, 1977, pp. 391-392. U.S. Bureau of Labor Statistics, U.S. Working Women: A Databook.

Dr. Isabel Sawhill told the Select Committee that, as a result of the growth in women's work outside the home, only one-sixth of American families now fit the traditional picture of a breadwinner husband and a homemaker wife caring for dependent children. The other 84 percent of families include working wives, single parent households, and older couples whose children have left home.

Financial necessity is the main reason for seeking work cited by women today. Many economic opportunities have opened up recently for women, who at the same time have been acquiring higher education and more valuable skills. Another reason for increased participation of women in the labor force is the changed attitudes about women's roles in society which have emerged over the past few decades. In addition, demographic factors such as later and fewer marriages, delayed childbearing, smaller families, and increased divorce rates have accentuated the trends.

1. CONSEQUENCES OF GROWTH

The recent rapid growth in the labor supply has been accompanied by both high unemployment rates and low earnings growth, shown in table 5, as the demand for labor has failed to keep up with the supply. Thus, we have the paradox of record employment and unemployment at the same time. Monetary and fiscal policies and uncontrollable fac-

tors such as rising energy costs have contributed to the high unemployment rates and low earnings growth, as have demographic factors. Many of the recent entrants into the labor force have been women and young people. Partly as a result of their inexperience, these groups have much lower earnings and generally higher unemployment rates than prime-age experienced male workers.

TABLE 5.—SELECTED ECONOMIC INDICATORS: 1968-1977

	1968	1974	1975	1976	1977
Per capita disposable personal income (1972 dollars)	3,515	3,973	4,014	4,137	4,293
Annual percentage change in per capita real disposable income	+1.5	-2.2	+1.0	+3.1	+3.8
Annual percentage change in real hourly earnings (private nonagricultural)	+1.7	-2.3	-.2	+1.4	+1.8
Unemployment rate, total	3.5	5.6	8.5	7.7	7.0
Men, age 16-19	12.2	16.0	19.9	19.0	17.7
Men, age 20+	2.1	3.8	6.7	5.9	5.2
Women, age 20+	3.7	5.5	8.0	7.4	7.0

Sources: U.S. Bureau of the Census, Statistical Abstract of the United States, 1974, p. 342; Council of Economic Advisors, Economic Indicators, April 1978, pp. 6, 12, 15.

With regard to income, Dr. Richard Freeman, professor of economics at Harvard University, and Dr. Joseph Anderson of Williams College told the Select Committee that the recent shifts in the relative numbers of young versus older workers have created a corresponding shift in their relative earnings. For example, male college graduates 45 to 54 now earn 63 percent more than those 20 years younger; in 1968, the advantage of the older college graduates was only 38 percent. Dr. Anderson stated that employers cannot substitute freely between older and younger workers. Older workers have more experience and skills which are specific to their jobs; younger workers tend to have higher educational attainment, but not the specific skills needed for a given job.

Thus the recent excess of younger workers compared with older workers has increased the economic premium commanded by older workers. In particular, Dr. Freeman reported that the economic returns of college attendance have fallen off for younger workers because of their greater numbers. Dr. Freeman's analysis shows that more rapid growth of the economy in recent years would have raised the earnings and employment of all workers, but would not have counteracted the decline in the relative wages of younger as compared with older workers.

Dr. Anderson told the Committee of his studies of the effects of demographic factors on unemployment rates. The rapid growth in the labor supply has had two consequences. First, the growth in the labor force has resulted in a greater proportion of inexperienced workers in recent years. Because inexperienced workers have higher unemployment rates, the changing composition of the labor force has produced higher average unemployment rates. Second, group-specific unemployment rates have increased for both inexperienced and experienced workers. Black male teenagers have been especially hard-hit; in 1976 their measured unemployment rate was 35.4 percent, five times that of the labor force as a whole. Furthermore, no one knows how many become discouraged from seeking work or are lured into illegal activities

and thus drop out of the measured labor force altogether. Dr. Freeman reported that, of black recent high school graduates who did not go on to college, only one-third had jobs six months after graduation.

To a considerable extent, the high crime rates of the late 1960s and the early 1970s can be explained by the large proportion of youth in the population, the result of the "baby boom." Young people are more likely than older persons to be arrested for crimes and thus a young population pushes up the crime rate. The Commission on Population Growth and the American Future found that, between 1960 and 1970, 28 percent of the reported increase in arrests for serious crimes resulted from growth in the proportion of the population under 25, and other demographic factors accounted for another 22 percent of the rise.

With continuing low fertility, the population will age somewhat, so we can anticipate lower crime rates in the future if the crime rates for each age group do not change. Indeed, falling crime rates have been observed in numerous cities in recent years. The passage of time should ease other transitional problems as new workers accumulate job skills and are absorbed into the mainstream of the labor force.

Dr. Sawhill agreed with Representative Dave Stockman that historical experience shows that the American economy can absorb all the recent additions to the labor force within a relatively short time. The fall in unemployment rates and rise in real wages since 1975 may signify the beginning of a new trend, as the composition of the labor force shifts from a newer to a more experienced group.

In addition, the 1980s will see a decline in the influx of new workers, although there is some disagreement about the extent of the decline. Dr. Sawhill projected a more rapid increase in female labor force participation than does the Bureau of Labor Statistics. If present trends of low fertility and rising women's labor force participation continue unabated, the period of adjustment would be prolonged, perhaps even into the 1990s, and changing legal and illegal immigration could also alter present projections of the labor force.

Dr. Freeman and Dr. Andersen suggested that the "baby boom" generation may never achieve the relative economic success of the generations immediately preceding or following it, because the large size of the "baby boom" generation creates an oversupply of workers in that age group. Researchers are now beginning to evaluate the possibility that economic (and social) disruptions such as high unemployment, low wages, and slow advancement will continue to plague the "baby boom" generation as it ages.

A possible offset to the detrimental effects of the large numbers of the "baby boom" generation is their high educational attainment. As of 1976, 85 percent of those age 25 to 29 had completed high school, in contrast to 61 percent of their counterparts in 1960 and 38 percent in 1940. Thus, growth in skills as well as changes in other factors contributing to productivity, such as capital investments and technological progress, may eventually protect the "baby boom" generation against lower income relative to other generations.

2. POLICY ALTERNATIVES

The consensus of the witnesses before the Select Committee was that economic policy must recognize and respond to important demographic changes in society. For example, high unemployment rates caused by the recent entry of many inexperienced workers into the labor force require, not only traditional monetary and fiscal policies, but also measures designed to help individuals find and keep appropriate jobs. Furthermore, policies such as investment subsidies, mandatory retirement, and minimum wage must be assessed in terms of their benefit to all and not to employers alone. Some important labor market issues which should be investigated are discussed in the following pages.

Economists testifying before the Select Committee agreed that society can and should provide jobs for all who wish to work—men, women, teenagers, senior citizens. Dr. Sawhill stated:

There is plenty of work to be done in our society. And it would be a real travesty to ignore the contribution which women can make. I think the issues here are very similar with respect to older people. We see an emerging debate about increasing the retirement age and whether the economy can absorb the older workers. My answer would be exactly the same as it is in the case of women. I think there is a short-term digestion problem . . . we should talk about as well as an inflation constraint on job creation, at least in the ways we have already done it. For some economies, and increasingly even for this one, there is a balance-of-payments constraint.

Dr. Sawhill added that perhaps the most important ingredient for making employment policies work is finding innovative ways of controlling inflation, perhaps by granting tax incentives to encourage firms to hold down prices and wages.

Dr. Anderson advocated concentrating on creating the type of jobs people want to take:

We have a very affluent economy. On the whole, goods and services are not really scarce in the United States as is the case in many countries over the world. We can afford to be a little softer in our approach to labor market issues and think about the importance of creating jobs people want to take rather than the importance of getting everyone to work to produce enough. . . . There must be jobs that people feel are meaningful and that can provide them with incomes that make them think it is worth their time to take the jobs.

He emphasized the importance of matching people with jobs, of providing young people with good information about career possibilities, and of helping unemployed workers search for jobs. Dr. Sawhill agreed with Representative James H. Scheuer that the experience of other countries in matching job-seekers with jobs—for example by the use of computers—should be studied and more widely used in the United States.

The witnesses also discussed the three types of unemployment—frictional, cyclical, and structural—and the appropriate policy response

for each. Frictional unemployment is due to normal turnover as some people voluntarily leave jobs, re-enter the labor force and search for new employment. Dr. Sawhill estimated that frictional unemployment amounting to 3 percent or less of the labor force poses no problem. Cyclical unemployment refers to economy-wide unemployment during the down-swing of a business cycle. Cyclical unemployment can best be controlled by macroeconomic policies, both fiscal and monetary.

Finally, structural unemployment refers to unemployment of specific groups due to a mismatch of jobs and skills. Elementary school teachers have been structurally unemployed during the 1970s, as described earlier. Mill workers in New England were structurally unemployed after the textile industry shifted to the South. Teenage high school drop-outs are structurally unemployed if their skills are so low that employers are unwilling to hire them at the minimum wage. Methods of dealing with structural unemployment include assistance in searching for jobs, training programs, relocation assistance, and public service employment.

The witnesses were asked what effect unemployment insurance has in encouraging people to remain unemployed rather than take an available job. Dr. Freeman agreed that there has been some "voluntary unemployment," but he cited surveys which show that 75 percent of those receiving unemployment compensation did not have a single job offer. Dr. Sawhill noted that the time had come to reevaluate the current unemployment insurance program and its role in income replacement. Dr. Anderson argued that reducing unemployment insurance would not be a good way to increase employment because some would suffer hardship. He also reminded the Committee that unemployment insurance is social insurance and not welfare:

Unemployment compensation is conceived of as a form of insurance to protect people against unforeseen job loss, regardless of what their income is. Similarly, Social Security is to guard people against the loss of employment ability that occurs with age and disability, regardless of what their income is. Many groups in the United States have felt that it is important to distinguish between these types of programs that are like insurance programs, on the one hand, and welfare on the other, which is directed toward establishing a minimal level of income for everybody. . . . I think we want to recognize a very important political and psychological role that the distinction has played and continues to play.

Dr. Anderson commented in particular that, to increase economic efficiency, the unemployment insurance system should end its subsidization of seasonal industries.

The witnesses discussed the special issues of employment for certain demographic groups in the labor force, including the special need for military manpower. They emphasized that policymakers must be aware of the labor force participation of women and teenagers in order to deal with the changing economic scene. Dr. Anderson told the Committee that social programs, such as child care, health care, education, and Social Security, must be redesigned for a society in which most women work. To help the growing number of two-earner

families cope with home responsibilities, Dr. Sawhill recommended consideration of several possible policies such as organized child care, support of flexible and shorter working hours for both husband and wife, and modification of income tax and Social Security laws to eliminate their implicit "marriage tax."

Dr. Sawhill emphasized that women workers of age 40 or older—both married women after their children are grown and widowed and divorced women after their marriages are ended—have special needs as they enter or re-enter the labor force. Such women need counseling, some skill training, help with child care arrangements, and easier access to part-time jobs through which they can ease the transition from work at home to work outside the home. The rising trend in divorce gives urgency also to the need for income of homemakers who do not wish to work outside the home.

Another group with special counseling needs is younger women and teenage girls. Dr. Sawhill advocated that they be advised about the growing range of career options for women. She expressed particular concern about young women who are trapped into early marriage by unwanted pregnancies, motherhood, and low educational attainment and as a result have poor economic prospects. (The Select Committee's Report, *Fertility and Contraception in the United States*, makes extensive recommendations on this subject.) Finally, Dr. Sawhill advocated vigorous pursuit of measures to promote equal opportunity for women in the labor force. In addition to the humanitarian reasons for such policies, she foresaw greater productivity if women reached their full economic potential with no constraints on job choice.

Many economic policies which would benefit women workers would also help teenage and young adult job-seekers who share the problem of inexperience. Dr. Sawhill recommended that training, counseling, and subsidized apprenticeships be targeted at high-unemployment groups with no recent labor market experience. All the witnesses agreed, however, that some young people have almost intractable problems which may cause them to be economically disadvantaged throughout their lifetimes. Dr. Sawhill stated that society can afford to assure jobs for these youths and recommended that:

The group that we should really focus on; that should be the priority for some kind of public policy intervention, is the out-of-school and out-of-work youth. I say out of work, by the way, rather than unemployed because as Dick Freeman said previously, there is this large group which has dropped out of the labor force, and we do not know what these people are doing. They may be involved in the irregular economy. I do think that our programs have not really focused on the need to provide serious remedial training for young people who are in this at-risk population. There are political pressures to spread the money rather broadly, both geographically and demographically, and as long as you do that . . . you are not going to buy very much with your expenditure of public funds, other than a little income for an individual for some limited period of time.

Furthermore, she emphasized the need for better education, so that high school students can obtain the basic competency skills necessary for productive lives.

Some of the witnesses commented briefly on the future adequacy of military manpower. The rapidly declining number of births in the late 1960s and early 1970s will create by the 1980s a contracting pool of 18- to 24-year-old males. Dr. Anderson noted, however, that the increasing reliance on women in the armed forces could mean a larger group of potential recruits than in the past. Both he and Dr. Julian Simon of the University of Illinois agreed that demographic factors would not force a contraction of the armed forces and thus would pose no threat to national security.

Dr. Sawhill supported Dr. Anderson in recommending increased reliance by the armed forces on women. She also suggested that consideration be given to a national youth service, of which military service would be only one facet. Representative Erlenborn expressed doubt about this approach, saying that most young people would be more productive in the private economy than in the public sector.

The witnesses recommended increased attention to data, research, and projections. Dr. Sawhill stated strongly that investment in information is cost-effective:

Given the amount of money that we spend on operating programs it really is too bad that we do not invest a little bit more in information. Even if it happens that in only one case out of 10 that the new information leads to much wiser policy, it would clearly be worth it in some cost-benefit sense. The information and analysis are very cheap relative to the cost of running the programs.

The witnesses agreed that more information on youth is needed in order to formulate effective employment policies. Both Dr. Freeman and Dr. Sawhill deplored the lack of data about young people and the reasons for their lack of labor market success. As a precondition to setting policy, Dr. Freeman recommended that surveys be designed to measure what non-working urban black youth are doing with their time. Dr. Sawhill added that there is little evidence on the effects on employment of the availability of lawful jobs versus criminal activities. Dr. Freeman stated that further analysis is needed before conclusions can be drawn about the effects of the changes in the minimum wage on the employment of low-skill groups. Mr. Robert Parke of the Social Science Research Council called for more long-term data, with a view toward better measuring the relation of an age group's size to its economic status over its lifetime. He specifically advocated that the Department of Labor's updated National Longitudinal Surveys of Labor Market Experience be extended to cover a wider age group.

Commenting on unemployment data in general, Dr. Freeman noted that data on the extent of unemployment (both the number of jobless individuals and the average duration of their joblessness) are misleading because many who cannot find jobs become discouraged, drop out of the labor force, and are no longer counted as unemployed. Dr. Sawhill said that the unemployment rate is no longer a good measure of economic hardship, in part because so many families have more than one wage earner. She stated that the unemployment rate is, however,

a good measure of "the under-utilization of human resources and the output the economy could produce if we were to put people to work." The temporary National Commission on Employment and Unemployment Statistics is in fact now assessing data needs for measuring both the individual economic hardship and the cost to society in wasted human resources.

According to the panel of witnesses before the Select Committee, official projections of the labor force, particularly the female labor force, need to be improved. The Bureau of Labor Statistics (BLS) has a history of underestimating the growth of women's work outside the home. In December 1976, BLS projected that the female labor force participation rate would rise from 46.3 to 48.4 percent between 1975 and 1980. As of May 1978 the participation rate had already risen to 49.8 percent. Not until 1978 did BLS publish alternative projections of labor force participation rates to replace the single projections of earlier years. Dr. Sawhill recommended that more resources be devoted to making projections. It is important to have good projections not only for predictive purposes, but also for knowing the non-inflationary unemployment rate and setting economic policy goals.

To summarize, United States employment policies have been strained recently by two demographic changes: the entry of the "baby boom" generation into the labor force, and the increased female labor force participation which has accompanied lower fertility and marriage rates. These experiences have highlighted the need to consider demographic factors in setting economic policies, for example, in determining the goals for full employment.

Today's declining unemployment rate may be a harbinger of tighter labor markets in the 1980s after absorption of the "baby boom" generation is completed, although much will depend on economic trends and immigration policies. There may continue to be serious disadvantages, such as slow advancement and low wages, for "baby boom" workers because of their large numbers. Later, the retirement of the "baby boom" generation, which will begin in the next century, will put pressures on the American economy for support of a rapidly growing elderly population. These needs and pressures are the topics of the following pages of this chapter.

E. THE ELDERLY POPULATION

Substantial changes in the elderly population have occurred in recent years, and these are expected to continue for several decades. First, the size of the elderly population has increased very rapidly since 1970 because of the aging of the large generation of Americans born in the early years of this century. Second, the past decade has witnessed significant reductions in mortality which have improved survival prospects at the older ages, as discussed in Chapter I. The combination of these two changes has resulted in an aging of the elderly population itself; the number of the elderly who are age 85 and over has increased about 40 percent in the last decade.

Finally, within 35 years, the first of the "baby boom" generation will reach age 65, thus inaugurating a "senior boom." From a total of 20 million in 1970, the elderly population is projected to grow to 34

million by 2010 and then to 52 million by 2030. The proportion of elderly persons in the total population, which was 10.7 percent in 1976, will start to rise rapidly in 2010. It will peak in the year 2030 somewhere between 14 and 22 percent of the population (depending on whether fertility is closer to the Census Bureau's high or low assumption).

1. CURRENT STATUS

The most salient feature of our elderly population is its heterogeneity. As Dr. Donald Cowgill, professor of sociology at the University of Missouri, stated:

The only thing they have in common is longevity. There is reason to believe that the older generation contains a greater variety of interests, talents, capabilities, attitudes, and points of view than any other generation in our population.

Rising life expectancy means that there can be several generations within the age 65-plus category. Although it is still unusual for an adult to reach age 65 with an aged and dependent parent still surviving, the chances of this happening are increasing. The generations within the elderly population differ not only by their current age, but also by their entire life history, i.e., their accumulated education and work experience, income and wealth, places of origin and residence (including possibly immigration from a foreign country), age at marriage and child-bearing, and so forth. Thus, one cannot assume that the 65-year-olds of today are identical to their counterparts twenty years ago, nor does the status of the 85-year-olds of today give more than a rough idea of the future needs of today's 65-year-olds.

Age is the most important descriptive variable in the elderly population. In addition, differential survival rates by sex result in important differences between the male and female segments of the elderly population, even within age groups. The health status of the elderly deteriorates exponentially with advancing age, though at a slower rate for women than for men. Table 6 gives some measures of survival for different segments of the elderly population.

TABLE 6. SURVIVAL OF THE ELDERLY, 1976

	Expectation of further years of life at:		Mortality Rate (deaths/1,000)		
	Male	Female	Male	Female	
Birth	69.0	76.7	All ages	10.1	7.8
Age 55	20.4	25.8	Age 55-64	20.0	10.1
Age 65	13.7	18.0	Age 65-74	43.4	22.0
Age 75	8.6	11.2	Age 75-84	95.1	60.0
Age 85	5.3	6.6	Age 85+	179.8	143.1

Source: National Center for Health Statistics, "Final Mortality Statistics 1976," Monthly Vital Statistics, Advance Report, Vol. 26, No. 12, Mar. 30, 1978, p. 12, p. 14.

Given the well-known health problems of older people generally, it is not surprising that average per capita medical expenditures for the elderly in 1976 were \$1521, three times the average for the general population. The \$1521 average conceals striking differences by age within the elderly population. Table 7 provides further information about the health status and medical expenditures of the elderly.

Expenditures on medical care for the elderly increased 31 percent in the two years before 1976. While much of the increase was due to inflation, there have been genuine improvements in medical care and consequently greater usage.

TABLE 7.—MEASURES OF THE HEALTH STATUS AND MEDICAL EXPENDITURES OF THE ELDERLY

	Age group				
	65-69	70-74	75-79	80-84	85+
Percent in nursing homes (1973-74).....	1.2		5.9		23.7
Medicare program costs (1977):.....					
Male.....	\$712	\$864	\$989	\$1,100	\$1,232
Female.....	616	789	886	1,016	1,052
Average number of days in hospitals for the noninstitutionalized elderly population (1975-76).....	3.0	3.7	4.7	5.8	8.3
Average number of office physician visits for the noninstitutionalized elderly population (1975-76).....	4.3	4.6		4.3	
Percent of noninstitutionalized elderly population unable to do major activity (1975-76).....		14.7		22.7	

Sources: Testimony of Mary Grace Kovar and Robert Derzon before the Select Committee on Population, May 24, 1978.

The advent of Medicare and Medicaid in 1965 substantially improved the access of the elderly to needed medical care, yet the elderly continue to have unmet health needs. In some cases they do not seek available treatment; in others, physicians may perceive a symptom to be the inevitable consequence of old age rather than a problem which can and should be corrected. Ms. Mary Grace Kovar, Chief of the Analytical Coordination Branch at the National Center for Health Statistics, told the Select Committee that, among the younger elderly (age 65 to 74), at least 20 percent had untreated hypertension, 9.5 percent suffered from treatable eye abnormalities, and 61 percent needed dental care.

Another cause for concern is whether elderly people with some health impairments are receiving the appropriate level of care. A GAO report on home health care for the elderly prepared for the Select Committee on Aging reports that 50 percent of home services to the elderly (personal care, nursing care, homemaker service, etc.) are provided by family and friends. Thus, institutionalization is often the only alternative for providing daily assistance to the elderly who are alone, but who do not require regular medical care.

The marital and family status of the elderly are closely linked to the basic matters of age, parenthood, and migration. Marital status of the elderly is greatly affected by the higher male death rates which create a growing excess of women over men as age advances. In 1977, for example, there were 5 women for every 4 men in the 65 to 69 age group, but twice as many women as men in the 85 and over age group. Elderly women are much less likely to be married than are elderly men, as shown in table 8.

TABLE 8.—MARITAL STATUS OF THE ELDERLY, 1975

[in percent]

	Age 65-74		Age 75+	
	Male	Female	Male	Female
Married, spouse present	81.8	47.3	68.2	22.3
Married, spouse absent	2.0	1.8	1.8	1.1
Widowed	8.8	41.9	23.3	68.4
Divorced	3.1	3.3	1.2	1.5
Single	4.3	5.8	5.5	5.8
Total	100.0	100.0	100.0	100.0

Source: U.S. Bureau of the Census, Special Studies, Series P-23, No. 59, May 1976, p. 46.

The availability of children to care for their parents in old age depends on many factors. Although family size has declined since the 19th century, parallel reductions in mortality have meant little change in the number of children surviving to a parent's old age. In the future, fertility will be the main determinant of surviving children, as child mortality rates are already very low. For today's elderly, however, migration patterns are more important than survivorship in determining relationships with their children.

The increasing tendency for young people to live far from their parents reduces the frequency and extent of the family contacts available to older people. In addition, rising incomes and better health of the elderly have increased their own mobility and enabled many of them to satisfy a desire for privacy and independent living. Thus, the proportion of the elderly living with relatives has fallen from 14.6 percent in 1965 to 9.0 percent in 1975.

Still another factor is the increasing labor force participation of women. Because most of the care of the elderly has been rendered by daughters and daughters-in-law, their increasing propensity to work outside the home is likely to lead many of them to substitute money for time in providing support for their elderly relatives.

The stated preference of most elderly people is to live independently yet near their children ("intimacy at a distance," according to one sociologist), but the living arrangements of the elderly cannot be separated from their family status, health status, and income. The youngest older people and elderly males are more likely to be married and living with their spouses than elderly women and those in the oldest age groups, regardless of sex. The failing health that comes with advancing age means that the proportion of older people who are institutionalized rises from 1 percent in the 65 to 74 age group to 24 percent in the 85-and-older age group.

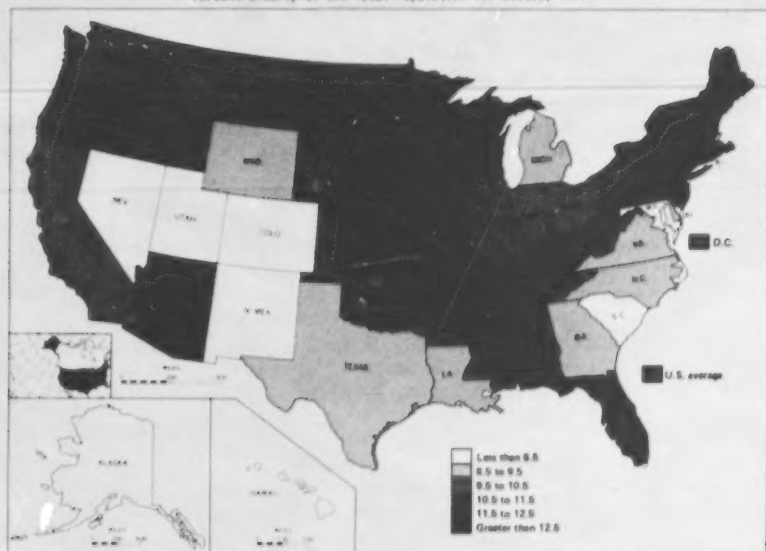
The few long-term studies of the elderly confirm the supposition that the changes in their living arrangements represent a series of successive adjustments to worsening health and inability of the family to provide needed care. Typically, the transition goes from an independent household, to an apartment or room in a retirement home or in the home of an adult child, to an institution. It is significant that the proportion of the elderly who are institutionalized has not changed in recent years, though there has been a large shift of elderly patients from mental hospitals and other inappropriate institutions to nursing homes. Indeed, because of increased longevity, the odds have been rising that any individual will have a parent who is institutionalized at some time in the future.

Historically, there has been a decline in the prevalence of multi-generational households, those in which grandparents remain as they pass through the transition from a healthy, independent life to a dependent life. Another significant change has been a marked decline in the custom of having strangers in the household. Through the 1930s, at least a third of all households had boarders at some time, particularly the households of the elderly where lodgers often performed household chores in partial payment for their room and board. Such arrangements are much rarer today.

Our society is only beginning to devise substitutes for the previous transitional living arrangements of the so-called frail elderly. Ways to ease the transition that are being developed include home health care agencies; personal care and chore services; arrangements for foster care, day care and vacation care; congregate community housing; and subsidies for remodeling the homes of the elderly. Living arrangements, however, depend as much on income as on the availability of alternative residential environments. With enough income, older people can afford many measures to compensate for their declining health.

The elderly are relatively immobile compared to the rest of the population although they have slightly elevated migration rates at the ages corresponding first to retirement and later to institutionalization. Figure 12 shows the concentration of non-migrant elderly persons in the Central States and the Northeast and the even larger proportion in Florida, long a popular destination of elderly migrants. New retirees are moving also to California, Arizona, the Ozarks, and Oregon, thus contributing to the growing concentrations of the elderly population in the so-called Sunbelt and elsewhere.

FIGURE 12
Percent Elderly of the Total Population for States, 1976



Source: Bureau of the Census, unpublished data.

Local areas tend to "age in place." For example, the young adults who lived in the cities in the 1920s and 1930s have remained there, but their children, the young adults of the 1940s and 1950s, moved to the suburbs, leading to the current concentration of the elderly in what have been termed the "gray ghettos" of central cities. When neighborhoods deteriorate, the very old often find themselves trapped. Poverty, ill health, or social ties keep them from responding as quickly as the young to changing local conditions. In rural areas there has been some movement of the elderly, but in the main it has consisted of shifts to nearby small towns from farms they can no longer operate.

Witnesses told the Select Committee that the geographic age segregation in the U.S. has been largely voluntary, as parents choose to stay in their lifelong neighborhoods and children choose to move away. Public policy has contributed to these choices by encouraging suburbanization as well as construction of special housing projects for the elderly in central cities. Yet the witnesses also stated that age segregation has been excessive, beyond the desires of either the elderly or their children.

The socioeconomic status of the elderly is determined primarily by their education, previous occupation and income, and by retirement income. Decade by decade, the incomes, skill levels, and educational attainments of the elderly population have risen, as have those of other Americans. At any point in time, however, the elderly have lower

socioeconomic status than younger adults, because the status and wealth of the elderly were built up in an earlier period when education and wage levels were lower.

Incomes of the elderly drop sharply upon retirement, since few individuals have enough private savings, investments, or pension plans to supplement Social Security payments and replace their entire pre-retirement levels of income. As individuals grow older, they are usually forced to draw upon the assets they may have accumulated during their working years, so that the incidence of poverty increases with age.

In recent years the elderly have also been particularly hard hit by both the general inflation, because pensions fail to keep pace with the rising cost of living, and by the specific increases in health care costs, energy expenses, and property taxes. Non-married women are especially vulnerable, because few women have a history of earnings and asset accumulation comparable to that of men. After a husband's death, the widow's financial status usually deteriorates.

2. FUTURE NEEDS

Planning for the future needs of the elderly requires information about not only the number and characteristics of the future elderly, but also where they will live.

The recent rapid growth in the number of elderly people will continue during the 1980s, as is shown in table 9. The next 20 years should then see a lull in the rapid growth of the elderly population until the aging of the "baby boom" generation creates a "senior boom" starting in 2010. Between 2010 and 2030, the elderly population will grow by 20 million to a total of 55 million. As the table also shows, the aging of the elderly population will continue for some time. Of the 6.9 million increase in the elderly population in the 1980s and 1990s, almost three-fourths (5.0 million) will be in the 75-and-over age group.

TABLE 9.—PROJECTED CHANGES IN THE ELDERLY POPULATION: 1970-2050 (MILLIONS)

	1970-80	1980-90	1990-2000	2000-10	2010-20	2020-30	2030-40	2040-50
Increases in:								
Age 65-74	+3.0	+2.3	-0.4	+2.3	+8.4	+3.7	-4.8	+1.8
Age 75-84	+1.0	+2.0	+1.5	-1.1	+1.7	+5.2	+2.4	-2.8
Age 85+	+4	+6	+9	+8	+2	+9	+2.3	+1.5
Total age 65+	+4.4	+4.9	+2.0	+3.0	+10.3	+9.9	-1	+6

¹ Series 11 projection; other figures are same for all 3 projections.

Source: U.S. Bureau of the Census "Estimates and Projections of the Population: 1977-2050," Current Population Reports, Series P-25, No. 704, July 1977, p. 40, p. 50, p. 70; U.S. Bureau of the Census, "Demographic Aspects of Aging and the Older Population in the United States," Special Studies, Series P-23, No. 59, p. 3.

Projections of the elderly population are more accurate than projections of the youth population. Because all the people who will reach age 65 between now and 2040 have already been born, future mortality rates are the main determinant of the number of elderly Americans in that year. (Immigration will be a relatively unimportant contributor to the size of the elderly population for the next 30 years because most immigrants are young adults. For projections beyond 30 years, immi-

gration could be expected to affect the elderly population more.) For this reason, criticisms of the projections of the size and composition of the elderly population have focused on the projections of future mortality.

No alternative mortality assumptions are currently used in making population projections, although studies of alternative mortality possibilities are now underway. The single set of future mortality rates is determined jointly by the Census Bureau and the Actuary of the Social Security Administration (SSA). First, SSA determines the assumptions about future mortality rates by age and sex, based on an analysis of trends in mortality due to various causes. The Census Bureau then makes further assumptions about mortality differences by race, prior to making its population projections.

Past Census Bureau projections have consistently underestimated the growth of the elderly population. The primary reason for the underestimation has been the rapid and unexpected decline in mortality rates. Life expectancy at age 65 has increased by more than a year in the last decade. Thus in 1970, the elderly population was projected to grow by 1.4 million to a total of 21.5 million by 1975; in fact, the actual increase was 2.3 million, so that the 1975 elderly population was 4.1 percent higher than had been anticipated in 1970.

The assumptions about mortality which underlie the current projections have been revised to reflect the recent rapid declines in mortality. It is now assumed, however, that improvements in survival will slow down in the future. Thus, over the next seven decades, life expectancy at birth is assumed to increase by 3.3 years, whereas in the 1965-75 decade alone it increased by 2.3 years. As reported in Chapter I, most experts do not forecast an imminent breakthrough in mortality. But even if mortality rates fell twice as fast as under the current assumptions, the elderly population in 2020 would be 49.5 million, only 16 percent higher than the projected 42.8 million under current assumptions.

Because mortality assumptions are different for males and females, they implicitly determine the projected future sex composition of the elderly population. The advantage in life expectancy of females over males is expected to widen from the present 7.9 years to 9.2 years. Some analysts believe that, as female labor force participation grows, women workers will experience the same job-related health hazards, and their life expectancy will approach that of males, though not totally, because of biological differences.

There have not yet been any indications of such convergence, however, and thus the hypothesized future convergence has not been incorporated into the projections. Because of greater projected mortality improvements for women, the female elderly population is projected to grow more rapidly than the male elderly population in future decades, and thus the excess of women over men in the older ages to continue to grow. By the year 2000 there are projected to be three elderly women for every two elderly men; in the 85-and-over age group, there would be five women for every two men.

It is more difficult to project the other characteristics of the elderly population (besides age and sex composition) because behavior must be projected in addition to survival. Witnesses before the Select Committee predicted further improvements in health to match advances

in survival. They expected a continuing decline in the proportion of older people who are married, as the excess of women over men grows.

A continuation of the trend toward independent living by the elderly should continue, given their better health and higher incomes in the future. The elderly of the future should have higher educational attainment and higher incomes than in the past. Women in particular should have greater economic security in the future because of their improved work-histories and earnings today. The elderly of the future will have fewer surviving children than the elderly of the past, as well as smaller family networks in general, because of the general decline in family size during this century.

Witnesses before the Select Committee were more confident about predicting the future geographic locations of the elderly. They believe that current patterns of migration of the elderly (to the "Sunbelt") are likely to continue. Several witnesses told the Committee that increasingly the elderly of the future will live in the suburbs, rather than in central cities, as the suburbs begin to "age in place." Mr. Jacob Siegel, senior demographic statistician for the Census Bureau, noted that the Census Bureau will publish State-by-State projections of the elderly population later this year.

The future needs of the elderly population will differ from those of today's elderly. Projections of future needs involve two components. First, the future demands for services are projected on the basis of changes in the size of the various age and sex groups within the elderly population, on the assumption that the rates of usage of services by the different age-sex groups will not change. Second, projections must take account of changing usage rates for services by different age-sex groups. Thus, in an overall projection of needs of the elderly, changes in behavior can either offset or accentuate changes due to demographic shifts.

The demographic data suggest that the needs of the elderly will continue to grow rapidly in the 1980s, in part because the elderly population will continue to grow rapidly. Furthermore, the needs of the elderly will grow even faster than the size of the elderly population because of the growth in the proportion of the elderly in the oldest and most dependent age groups. For example, if current utilization rates are used to project future use of nursing homes, the next decade will see growth by three-fourths in nursing home residents from 1 million in 1975 to 1.73 million in 1990.

Rapid growth in demand will affect not only nursing homes, but also other goods and services which are used more with advancing age: hospitals, physicians' services, pharmaceuticals, group housing arrangements, smaller apartments, and so on. To sum up, judging by demographic considerations alone, not only will total spending on the elderly rise, but average spending on elderly persons will rise because of the increasing age and dependency within the elderly population.

Starting in 2010, the growth rate of the elderly population will accelerate, to as high as 29.5 percent during the decade of the 2010s, in contrast to 6.7 percent during the decade of the 1990s. It is difficult to predict the kind of services that will be demanded by the elderly that far in the future. Some of the implications for financing the needs of the elderly after 2010 are discussed later in this chapter.

It is even more difficult to predict behavioral trends. Health care is the field in which the best projections have been made (by the Social Security Administration and the Health Care Financing Administration), and these illustrate some of the conflicting factors which must be taken into account.

First, per capita health care expenditures for the entire population have been increasing recently at approximately 15 percent per year, a rate much above the general inflation rate. If the trend toward use of more as well as more sophisticated health care services continues, along with the rising prices of these services, the demographic component of rising health care expenditures may be a minor factor.

Only ten percent of the increase in Medicare expenditures over the last ten years has been due to a larger number of patients. Whether these trends will continue will depend upon future price increases of health services, technological advances, the success of cost containment measures, future increases in incomes, and development of new methods of meeting health care costs.

Second, it may be possible to develop cheaper substitutes for costly medical services rendered in hospitals and nursing homes, such as increasing the availability of home care. Certainly, it is better and less costly to provide limited assistance to help an elderly person maintain an independent household than to force institutionalization because of the lack of such assistance. As the availability and quality of substitute care in the home improves, more of the elderly can be expected to use it. Even though total expenditures may not fall, the social benefit—both to the elderly and to their previously unpaid family members and friends—could be immense.

Finally, the future use of health care will hinge on further increases in longevity. Extension of the best medical care practices to all citizens would reduce mortality, increase life expectancy, and undoubtedly raise per capita health care outlays. On the other hand, more widespread adoption by individuals of well-known preventive measures—diet, exercise, and avoidance of drug abuse and tobacco—could raise life expectancy while lowering health care costs. It is also possible that non-medical preventive measures—for example, the reduction of exposure to carcinogens in the workplace—will extend life. In this case, although medical expenditures may fall substantially, another part of the national accounts will reflect higher industrial production outlays. Finally, the added cost of technological improvements is also difficult to determine. The discovery of penicillin extended life at a negligible cost, whereas the recent development of CAT scanners, kidney dialysis, and open heart surgery have extended life, but at enormously increased costs.

3. POLICY ALTERNATIVES

Much of the current debate about policies affecting the elderly centers on the needs of older people that are not being met today. Still, there is a growing awareness that we should be planning now to meet future changes in the elderly population, especially planning for service facilities such as nursing homes and other residential facilities which take time to build and will be in use for years.

The role of the family in care of the elderly is one of the central concerns of both policymakers and the elderly themselves. Since enactment of Social Security legislation forty years ago, the public sector has assumed more and more responsibility previously borne by the individuals and families. The Federal Government now provides Social Security benefits, Medicare, Medicaid, and Supplemental Security Income, for example. Increasingly, State and local governments serve the elderly with subsidized housing, public hospitals, senior centers, and some home care services.

Although the role of the public sector has been growing, much of the support of the elderly still comes from their own efforts or those of their families and friends. In 1976, 19 percent of elderly men and 8 percent of elderly women were in the labor force. In 1975, 7 million beneficiaries of private pension plans received \$15 billion in benefits. The \$55 billion in Social Security benefits paid to retired workers, their dependents, and survivors in 1975 was based, in large part, on their previous work-history. In addition to income, of course, the elderly often need both medical and non-medical care. The GAO found that, of the 58 percent of the elderly who needed assistance in personal care, virtually all of them (96 percent) received that help from family and friends.

Witnesses before the Select Committee testified that public efforts to help the elderly should be designed to strengthen the family's ability to cope, rather than weaken it. Dr. Tamara Hareven, professor of history at Clark University, told the Committee that the elderly often feel isolated and helpless, because of the ambiguous division of responsibility between the family and the public sector. She recommended that:

We must utilize creatively whatever kin functions are surviving in American society, but we must provide adequate supports for kin to fulfill these functions . . .

Dr. Hareven emphasized that public policy should be supportive of the family at all stages of the life cycle. Dr. Beth Soldo, senior research associate at the Georgetown University Center for Population Research, made a specific recommendation that tax subsidies for the care of an elderly dependent by a child should be extended. Dr. Cowgill disagreed, however, arguing that it is more effective to give assistance directly to the elderly rather than to their families. All witnesses expressed concern about the isolation of the elderly within American society. Dr. Cowgill contended that, although the elderly often choose to live in age-segregated housing, public policy should avoid driving older and younger people apart against their wishes.

The witnesses heard by the Select Committee unanimously agreed that public policy should strive to help the elderly maintain their independent households as long as possible. Housing, transportation, medical care, personal care, recreation, and other policies must be coordinated to achieve this goal. Health-related problems can be relieved by some non-medical measures—for example, by helping elderly people with ambulatory problems find housing without stairs or by remodeling housing to serve their needs. Dr. Soldo emphasized the need for transitional residential environments and supportive services such as day care, vacation care, chore services, and home health care

for the frail elderly. She noted that England has used home visitors to monitor the condition of frail elderly persons and help them maintain their own homes.

Dr. Cowgill expanded on the need for government assistance in developing "a continuum of health care and housing for older people ranging all the way from independent private residences to hospitals and nursing homes," including such additional intermediate stages as foster family care, visiting nurses and doctors, boarding homes, and hospices. Dr. Hareven suggested that the Government place and monitor non-family members in the households of elderly people when appropriate and desired.

Mr. Herman Brotman, a consulting gerontologist, noted that although defense against institutionalization is critical, the health needs of the elderly will often mean that institutionalization is the only answer. Thus, efforts must be made to improve institutions for those who can no longer remain in their homes. He, like other witnesses, pointed out that many problems of old age can only be deferred, not eliminated. The large recent and projected increases in the numbers of older people underscore the need to resolve these issues.

Witnesses heard by the Select Committee emphasized the need to raise the incomes of the elderly. Dr. Soldo's research has found that living arrangements are highly influenced by income, which in many cases can be used to compensate for deteriorating health. Dr. Cowgill stated:

As far as housing is concerned, perhaps the most efficacious form of assistance to older people is some type of cash subsidy. Given adequate income, most of them can arrive at their own solutions.

I am not necessarily implying a decreased emphasis on other ways of assisting older people. I merely wanted to make the point that, if they have adequate income, many of their problems can be solved on their own initiative.

On the other hand, Dr. Soldo warned that in some cases increased income is ineffective but direct assistance can solve problems. For example, preliminary evidence shows that major home repairs are more likely to be done if the elderly are provided with free home repair services than if they are given more income. (Providing home repairs in this way would have the added benefit of increasing employment.) Mr. Brotman pointed out that where risks are not uniform (severe illness, for example, affects some but not all of the elderly), it may be less costly to provide services to those few who need them rather than higher incomes for all.

Another policy issue stems from the heterogeneity of the elderly population. All the witnesses before the Select Committee emphasized that no single program will benefit all older people, and that public policy must provide options to cover differing needs within the elderly group. Ms. Kovar observed that:

A subsidy to home ownership, for example, might benefit a physically healthy, mentally competent older person, but be detrimental to a frail forgetful one who could neither maintain the home nor resist the blandishments of people who offered to "help for a fee."

The witnesses emphasized the need for planning for the needs of the future elderly as well as those today. They expressed concern that the Nation will not respond to growth in the size of the elderly population and its increasing proportion of the very old in a timely, thoughtful way. Several witnesses pointed out the need for following the shifting patterns in the location of the elderly, in order to provide services where they are needed.

Ms. Kovar warned that the growth of retirement communities poses severe problems for the provision of health services. When they are started, they attract a young and relatively healthy segment of the elderly population, but within a few years, the community can be faced with large demands for health care services which had not been adequately foreseen or provided. Both Dr. Soldo and Mr. Brotman warned that future services for elderly must cope with the increasing suburbanization of the elderly population. Thus, facilities should be located in the suburbs but with easy access to public transportation to serve the less mobile elderly.

The witnesses agreed, also, that more data and research are necessary for making informed policy regarding the elderly. They agreed that, wherever possible, existing data on the elderly should be tabulated and reported by narrower age groups (at least 10-year age groups, and preferably 5-year age groups above age 65). Such tabulations would be easy to construct from existing data and would provide a wealth of detail. Dr. Robert N. Butler, Director of the National Institute on Aging, suggested that where samples are now too small to obtain reliable data about age groups within the elderly population, the upper age groups, which are smaller, could be oversampled.

Ms. Kovar told the Select Committee that, although inaccuracies in age reporting of the elderly was a problem in the past, the quality of self-reporting of age has improved greatly and soon will be very good because of the need for accurate age reporting to obtain Social Security and Medicare benefits.

Mr. Siegel told the Committee that census counts of the elderly continue to encounter problems. Age reporting is particularly poor when another family member reports the age of an elderly relative, as in the census or the Current Population Survey or upon registration of death. Although the total count of the elderly population in the census is believed to be quite accurate, there are offsetting errors in the counts of the different age groups within the elderly group. The very old tend to be isolated and easy to miss in surveys; on the other hand, some younger people report themselves as over 65 to increase their chances of getting age-related benefits.

Dr. Soldo advocated a National Survey of the Elderly (similar to one conducted in Britain) so that data on all aspects of aging can be coordinated. She deplored the present situation in which data on health, living arrangements, income, and the like come from such diverse sources that a complete and coherent picture of elderly people cannot be formed. Other witnesses, however, cautioned that the need for new data to answer specific policy questions must be evaluated carefully before additional surveys are undertaken.

Dr. Soldo also stressed the need for systematic national long-range data on the elderly, the better to understand the series of transitions which make up the process of aging. Although some longitudinal

surveys exist (notably, the Parnes National Longitudinal Survey and the Social Security Administration's Retirement History Survey), their coverage does not extend to the entire elderly population.

The witnesses disagreed about the priority that should be given to better projections of the future elderly population. Ms. Kovar and Dr. Cowgill believe that current projections are adequate. Dr. Butler and Dr. Soldo stressed the need to improve the study of mortality and the projections that result from these data. Both Dr. Soldo and Mr. Siegel recommended that the Census Bureau make alternative mortality assumptions for the population projections, in line with its current experimental work. Several of the witnesses emphasized the need to continue to improve the projections not only of the national elderly population, but also of its distribution among regions, States, and local communities.

To summarize, the elderly population is changing rapidly and will continue to do so for some time. Not only is it growing in size, but the older and more dependent segments of the elderly population are growing most rapidly. Social changes, too, emphasize the need to re-evaluate the adequacy of services for the elderly, both today and in the future. Public policy must take account of the heterogeneity as well as the complexity of the needs of the elderly. They are heterogeneous with respect to age (sometimes more than one generation in a family is elderly) and other characteristics.

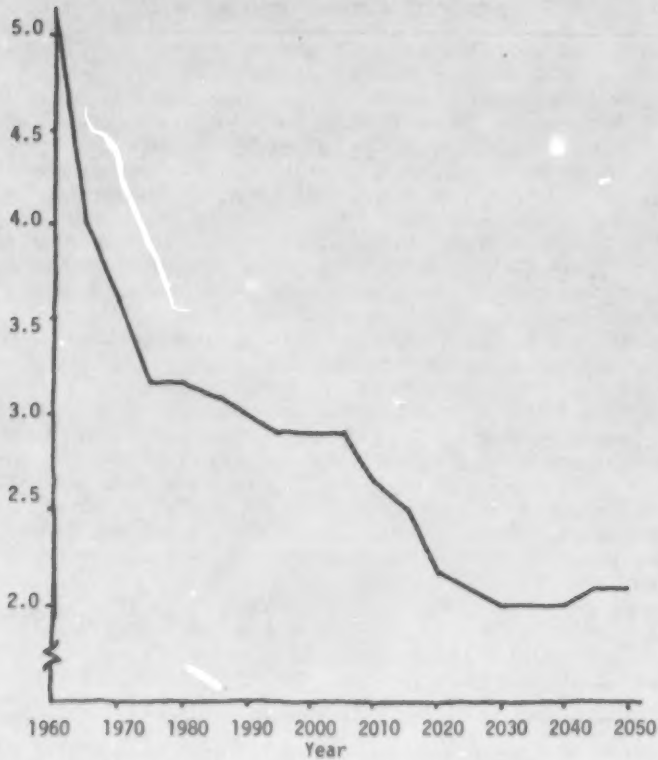
Living arrangements, health status, marital status, and income are interrelated in such a way that intervention, if fragmented, can have only limited success. Finally, policymakers must be aware of the demographic characteristics of the elderly population—its longevity, age structure, sex distribution, marital status, family relationships, and geographical distribution—and seek more information to ensure that policies are appropriate, timely, and effective.

F. POPULATION'S FISCAL IMPACT

The current debate over the financing of the Social Security system has brought home to many the fiscal consequences of changing age composition of the United States population. The rapid growth of the elderly population when the "baby boom" generation starts to retire in 2010 was discussed previously. That growth translates into a rapidly falling ratio of taxpayers to beneficiaries for the Social Security system, as shown in figure 13. The aging of our population will affect many programs besides Social Security.

FIGURE 13

Projected Number of Covered Workers per Beneficiary, 1960-2050:
Old Age, Survivors, and Disability Insurance Program



(Based on Alternative II of 1978 Trustee's Report: total fertility rate = 2.1, unemployment rate = 5.0)

Source: Francisco R. Bayo, Deputy Chief Actuary, Social Security Administration.

Secretary of HEW Joseph Califano recently noted that Federal spending on the elderly amounts to nearly one-quarter of the Federal budget and projected that, by 2025, 40 percent of the budget would go to the still rapidly growing elderly population. Colonel Robert De Marcellus of the Florida National Guard expressed concern to the Committee that the growing demands of the elderly would squeeze out other important budget expenditures, most notably those on national defense.

1. FINANCING AGE-RELATED PROGRAMS

Concern has recently been expressed that the growing proportion of the elderly in the U.S. population will place an increasing and intolerable burden on society to meet their needs. To quantify the seriousness of this burden, it is necessary to measure total dependency, not just that due to the increasing number of elderly dependents. It is important to know not only the total proportion of dependents in the population, but also the per capita spending, both public and private, on different groups of dependents.

A very crude measure of dependency relates the proportion of the population of working age to the proportion of nonworking age, whether young or old. Because fertility is the most important determinant of age structure in modern societies, it is usually true that an increase in the proportion that is elderly is largely offset by a reduction in the proportion that is young.

In this century the proportion of the population in the 18 to 64 age group in the U.S. has ranged from a high of 63 percent in 1942 to a low of 54 percent in 1964. Even if the proportion that is elderly doubles between now and 2030, the decline in the proportion under age 18 will mean that the population in the working ages will represent 58.7 percent as compared with 59.6 percent today. A high proportion of the population in the working ages is a fairly good indicator of low dependency, even though many of the people in the working ages have no earnings.

For example, housewives make an important contribution to social welfare by child rearing, cleaning, cooking, shopping, and the like, although they do not receive money for their efforts nor is their work represented in the gross national product accounts. The estimated replacement value of the average housewife's yearly services was over \$7,000 in 1977.

To know the proportion of the population that will be paying taxes, however, one must look not only at the balance of working-age people versus the old and the young, but also at the proportion of that age-group that is actually earning. Despite the aging of U.S. society in this century, the proportion of the total population which is employed has increased only from 35 percent in 1900 to 40 percent in 1975. This trend reflects several factors. Both youth and the elderly work less than in the past. Young people now obtain more schooling and enter the full-time labor force at older ages. Older people are retiring from the labor force at younger and younger ages. The reduced participation of the young and the old has been more than offset by the increasing paid work by women.

Once the total number and type of dependents has been determined, it is important to know the total amount spent on them. A widely quoted figure from the work of Robert Clark of North Carolina State

University and Joseph Spengler of Duke University gives public expenditures on an elderly person as three times the public expenditures per youth. In his testimony before the Committee, however, Dr. Clark noted that private spending is more important for the support of youth than for the elderly. When private expenditures on clothing and food are included, the total cost of an elderly dependent is only 50 percent higher than that of a young one. Much of the spending for youth, unlike spending on the elderly, increases their earning capacity in adulthood. The implication that a dollar spent on a young person is thus more rewarding to society than a dollar spent in behalf of an older person has not yet been fully investigated.

Much of the public spending on youth is for education, which is financed largely by State and local taxes. On the other hand, most of the public spending on the elderly is federally financed. Changes in the age composition of society may therefore require a changing balance of Federal versus State and local responsibilities and spending. This issue has thus far received little attention from experts in public finance. Dr. Clark stated that continuation of rapid growth in all levels of government spending might make such a discussion unimportant—that is, any shifts in the balance of responsibilities between levels of government could be overwhelmed by the growth in total public expenditures.

Except for elementary and secondary education, the Old Age and Survivors Insurance (OASI) component of Social Security is the Federal program most strongly tied to the age structure of our population, over 90 percent of the elderly receiving benefits. The Trustees of the Social Security Trust Funds are required to report to Congress annually on the current status and receipts and expenditures expected for 75 years in the future. The Social Security program thus provides an excellent and well-documented example of some of the fiscal problems associated with changing age structure.

Most of the Social Security program is financed by payroll taxes; thus the balance between revenues and expenditures is of great concern and can be easily measured. It is important to remember, however, that age-related programs financed by general revenues face analogous problems when changing age structure causes a shift in the balance of taxpayers versus beneficiaries.

The Social Security system has three separate components financed by the payroll tax. Old Age and Survivors Insurance (OASI) provides what are generally known as Social Security benefits to retired people, their dependents, and their survivors. Disability Insurance (DI) provides benefits to disabled workers and their dependents. Hospital Insurance (HI) provides Medicare benefits to the elderly and long-term disabled.

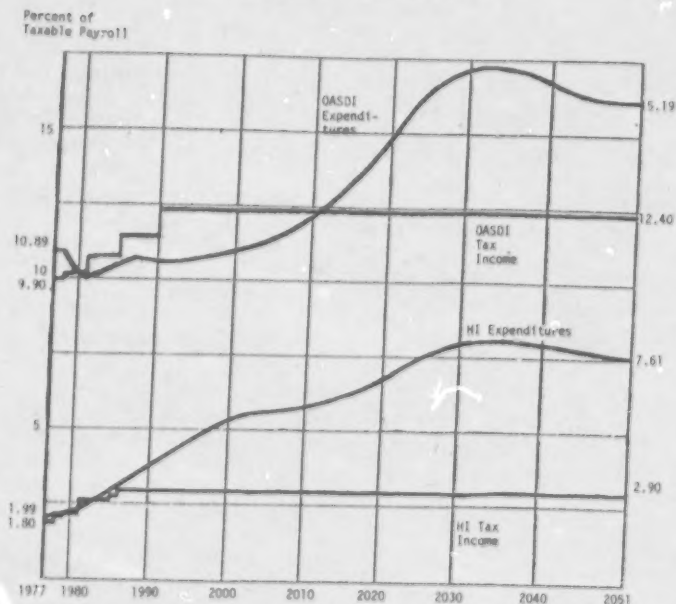
Since its inception in 1965, HI has been a rising proportion of the total OASDHI system, primarily because of soaring hospital costs, although demographic factors have also played a part. As of 1976, 15 percent of the system's benefits were paid under HI, 11 percent under DI, and 74 percent under OASI. The following pages focus on Social Security's OASDI component, most of which represents retirement benefits.

2. SOCIAL SECURITY SYSTEM PROJECTIONS

The Social Security system provides a model of the best government planning for response to demographic change. The annual long-range projections made by the Actuary of the Social Security Administration (SSA) of Social Security tax receipts and expenditures for the next 75 years provide policymakers with a unique planning tool. Figure 14 shows the current estimate of the long-run financing of the components of the Social Security system under the intermediate case projected by the Actuary.

FIGURE 14

Projected OASDI and HI Expenditures and Legislated
Tax Income under 1977 Law: 1977-2051



Source: Social Security Bulletin, March 1978, p. 26.

Expenditures for OASDI will start to exceed payroll tax revenues around 2010 when the "baby boom" generation begins to retire. With the subsequent erosion of the previously accumulated OASDI trust fund, the system will be in deficit by about 2025. For the HI component of the program, demographic factors are also important in the long run, but because of rising hospital utilization and costs, the HI trust fund will be in deficit before 1990. Expressed as a percentage of

taxable payroll, the average annual deficit will be 1.4 percent for OASDI and 3.0 percent for HI, for a total of 4.4 percent over the next 75 years.

Mr. Elmer Smith, Associate Social Security Commissioner for Program Policy and Planning, emphasized to the Select Committee that, because of the population changes over time, it is important to analyze the 75-year period in smaller segments. In the first 25 years OASDI will have an average actuarial surplus of 1.0 percent; in the second 25 years, a small deficit of 1.1 percent. In the last 25-year period beginning in 2028, the average annual deficit will shoot up to 4.1 percent. The 3.9 percent deficit in the year 2050 would continue indefinitely under the demographic and economic assumptions now being used.

As part of the projection process, the Actuary also estimates the sensitivity of future tax receipts and expenditures to the economic and demographic assumptions used. The discussion here will be limited to the sensitivity of the projections to assumptions about fertility, mortality, and labor force participation. The projections do not analyze alternative immigration assumptions, because legal immigration is determined by law rather than by behavior, and there are no reliable estimates of illegal immigration.

The long-run projections of Social Security actuarial balance are very sensitive to assumptions about fertility. In the intermediate case, in which fertility of 2.1 children is assumed, the actuarial deficit is 1.4 percent per year over the next 75 years. Fertility of 1.7 children would increase the deficit to 2.7 percent, while fertility of 2.5 children would reduce the deficit to 0.4 percent of taxable payroll. In effect, then, a 0.4 child increase in fertility reduces the actuarial deficit by 1.0 percentage points.

This 75-year average figure actually understates the long-run sensitivity of the deficit to the fertility assumptions. Since there is about a 20-year lag between births and the entry of those individuals into the taxpaying labor force, the effects of different fertility assumptions are concentrated in the latter two-thirds of the 75-year projection period. Table 10 shows the expenditures and actuarial balance by 25-year periods. In the last 25-year period, the deficit under the low fertility assumption is 7.2 percent of taxable payroll, 5.4 percentage points more than under the high fertility assumption.

TABLE 10.—AVERAGE OASDI EXPENDITURES AND ACTUARIAL BALANCE AS A PERCENT OF TAXABLE PAYROLL WITH INTERMEDIATE ECONOMIC ASSUMPTIONS AND VARIOUS TOTAL FERTILITY RATES

	Total fertility rate		
	1.7	2.1	2.5
Expenditures:			
1978-2002	10.6	10.6	10.7
2003-27	14.2	13.5	12.9
2028-52	19.6	16.5	14.2
Total, 1978-2052	14.8	13.6	12.6
Actuarial balance: ¹			
1978-2002	+1.0	+1.0	+1.0
2003-27	-1.8	-1.1	-.5
2028-52	-7.2	-4.1	-1.8
Total, 1978-2052	-2.7	-1.4	-.4

¹ Actuarial balance is computed by subtracting expenditures from average tax rates of: 11.67 for 1978-2002, 12.40 for 2003-52, and 12.16 for entire period.

Source: 1978 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds.

The basic mortality assumption in the Social Security projections is that between now and 2050 life expectancy for males will increase from 69.1 to 71.8 years and for females from 77.0 to 81.0. Because life expectancy in the U.S. is so high, any further reductions in mortality add less to duration of working life than they do to duration of the post-work period when retirement benefits are paid. Thus, the more rapid the decline in mortality, the greater the actuarial deficit because expenditures increase more than tax income. Because any mortality decline is assumed to continue throughout the 75-year projection period, mortality is lowest at the end, and the actuarial balance is thus most affected in the last 25 years of the projections.

In making the projections, the Social Security Actuary must also specify future labor force participation of both men and women and future patterns of retirement. Labor force participation rates of prime-age men have followed a slow downward trend in past years and are rather easy to predict. The participation of women and the retirement decision, however, have been more difficult to predict.

Mr. Smith provided the Committee with some analysis of the sensitivity of the projections to different labor force participation rates. He stated that the effect of recent legislation to end mandatory retirement will encourage older people to stay in the work force. Therefore, the law is expected to reduce the long-range costs of the system by about 0.1 percent annually. In general, however, the Actuary projects a continuing trend to voluntary early retirement which will be only partially offset by legislation to end mandatory retirement. Dr. Clark pointed out that recent increases in Social Security benefits have been instrumental in enabling workers to retire early.

Increases in female labor force participation result in decreases in the average annual actuarial deficit. Much of the benefit from higher female labor force participation rates results from the fact that a wife's Social Security benefit from her own earnings is usually less than a spouse's benefit from her husband's earnings, so that she receives little additional return due to her own payroll tax contributions.

It is interesting that the Social Security projections assume that female labor force participation rates are the same in all projections, regardless of the differing assumptions about fertility in each case. Deputy Chief Actuary Francisco Bayo assured the Committee that incorporating a sophisticated inverse relationship between family size and wife's earnings history would have a negligible effect on the actuarial balance.

3. POLICY ALTERNATIVES

The previous discussion has highlighted the fiscal crunch coming when the "baby boom" generation retires. Around 2010, the ratio of retirees to workers will start to rise rapidly. Even though the proportion of children in the population may fall somewhat and the percentage of women who work may continue to rise, the very size of the senior generation and the large needs of the elderly will create a growing economic dependency.

Society has three alternatives for dealing with the expected fluctuations in the proportion of the population which is elderly and the consequent strains on the Social Security system. First, benefits can be adjusted periodically, either through changing monthly amounts

or by changing the age of eligibility and thus the duration of benefit payments. Second, taxes can be adjusted periodically to assure sufficient Trust Fund income.

Third, a long-run equilibrium tax and benefit structure can be set and the interest-earning OASDI Trust Fund used to buffer the fluctuations in receipts and expenditures over time. Replacing the Social Security taxes with general taxation is perceived incorrectly by some as a fourth alternative for dealing with changing demographic circumstances. In fact, such a step would simply shift the problem from the Social Security system to the Treasury Department; the fiscal crunch caused by demographic factors would not disappear.

Congress considered all three alternatives in the past year. A benefit structure which has been expanding too fast (because of the erroneous inflation-adjustment procedure) was cut back. Tax rates were raised so that the Trust Fund will accumulate balances until 2010 and then will be drained only gradually as the "baby boom" generation's retirement years proceed. Nevertheless, the measures taken so far will be insufficient to cope with the continuing drains on the system after 2025.

Mr. Smith told the Committee that society should not attempt now to solve problems which are 50 years away:

In 2025, we're essentially out of steam, and the current financing does not carry us through this critical period. Now, that was deliberately left as an unfinished piece of business—I think partly for some of the reasons that are being raised this morning: a recognition that there is volatility in these estimates; that it's very difficult to make projections over this period of time; and there is a question about the extent to which you wish to tax people today for presumed events 50 years from now. There is also the recognition that the 1977 Amendments place the system in relatively good shape for the next 25 years. It would give us some time to make some adjustments, some technical analyses, and for further policy proposals.

On the other hand, Dr. Robert Clark of North Carolina State University argued that measures which would reduce benefits in retirement, such as raising the age of eligibility, must be introduced gradually and well ahead of any crisis, so that individuals have time to adjust their arrangements for retirement.

Now, what I suggest is not that we all of a sudden one day raise the retirement age from 65 to 70, but that we gradually do that or that consideration be given to gradually doing that. Say you wanted to raise it five years—if you raised it one-quarter every year, it would take 20 years to do that.

I think that if you're going to raise the age of retirement, you're changing the rules of the game under which people save for retirement, and they need a lead time in which to revise their expectations and their planning horizons. If you're going to start in 1990, I certainly would argue that 1980 is none too soon to put that into effect.

If one begins to do it well in advance, if you see that the projections are off—and my guess is that 2.1 is probably going to be optimistic over the short-term, that the fertility rate is below that and will remain below it for some period—then you can slow down the process of the rate of increase.

The witnesses agreed that the current debate about the future of the Social Security system is invaluable and should be expanded. The goal of policymakers should be to develop solutions before a crisis atmosphere arises with pressure for hasty and *ad hoc* responses. Both Dr. Clark and Mr. Smith agreed that now is the time when considerable research should be undertaken to assess the extent of the problem and the efficacy of alternative measures to deal with it. Mr. Smith mentioned that consideration by Congress will be assisted in the next few years by the reports of the quadrennial Advisory Council on Social Security, an independent body, and the Presidential commission studying retirement. Finally, all agreed that policymakers must be aware of the demographic factors and make use of rather sophisticated projections.

Witnesses touched only briefly on specific solutions to the future problems of Social Security. Mr. Smith argued that society must think about the whole concept of retirement and review the benefit structure of Social Security, including spouse benefits, taxation of benefits, incentives for deferred retirement, and inflation-indexing. Dr. Clark stressed that the effects of different ages of eligibility on the system should be studied closely in the Actuary's full simulation model. He agreed with Representative Richard Gephardt that legislation concerning mandatory retirement and private pensions must be linked with legislation on Social Security, so that an integrated policy on retirement can replace the present fragmented approach.

Dr. Clark advocated the abolition of all mandatory retirement. He urged that research should consider, in addition to the problems of the Social Security system, the whole response of society to possible persistent fluctuations in age structure and the consequent ebb and flow of demands for particular age-related social services.

Representative Dave Stockman stated that the United States should study the ramifications of either a guest worker policy or of permanent immigration to even out the valleys in the age structure of the labor force and reduce fluctuations in economic dependency over time. Mr. Smith, discussing guest workers in Europe, noted that while they contribute social security taxes, they also receive benefits upon retirement, either in the host country or in their native countries under reciprocity or so-called totalization agreements. (The advantages and disadvantages of a guest worker policy are discussed more extensively in the report of the Select Committee, *Legal and Illegal Immigration to the United States*.)

Both Select Committee members and witnesses expressed considerable frustration with regard to the use of long-range projections in making Social Security policy. Mr. Smith emphasized that projections should be seen as a planning tool rather than as precise predictions about an uncertain future:

We're getting at the very heart of, in a sense, the actuarial science and how projections are made. On the one hand, I think these projections are extremely valuable for program planning purposes. I think they have introduced, in a sense, a discipline into the system . . . and there have been serious attempts to adjust the income and the outgo side of the ledgers whenever the projections suggested that that was a reasonable course of action. . . .

Now the other point I would like to make is that we are doing very long-range projections, so I think the actuaries and other people who are in this business of making future projections are always a little conservative about taking our most recent historical experience, particularly if it seems to vary from a long-range historical cycle, and using that as a basis for making 75-year projections. So there's probably a little lag if the current experience turns out not in fact to be an aberration, but to be essentially a new part of the curve for the future.

Representative Stockman suggested that using a wider range of assumptions in making the projections could enable policymakers to make more informed choices. Demographers in 1946 underestimated today's population by about 50 million (25 percent) because no one was willing to use extreme assumptions about fertility and consider the possibility of a postwar "baby boom." A more recent example occurred in 1972 when the Social Security provisions to offset inflation were enacted. Had projections been made with the assumption of double digit inflation, then considered extremely unlikely, the dangers of the 1972 inflation adjustment formula could have been foreseen, and it would not have been necessary to amend the law when double digit inflation did in fact occur.

Both Representative Stockman and Mr. Smith agreed that legislators should not automatically gravitate to the middle projection, the one with the intermediate assumptions. Mr. Smith did not support a suggestion by Representative Stockman for a separate Board of Actuaries, independent of the Social Security Administration, contending that lively debate about the assumptions now goes on when the projections are made, involving the Departments of Labor and Treasury, as well as HEW.

Social Security, however, represents only one of the many programs that will be affected by changing age composition in our future population. The extension of comparable long-range analysis to other programs would improve society's ability to meet the future challenges of demographic change.

III. GEOGRAPHIC REDISTRIBUTION OF THE UNITED STATES POPULATION

Population change in any given locale is the net result of births, deaths, and net migration. The recent sharp drop in fertility and changing migration patterns have resulted in significant shifts in the size and structure of regional and local populations within the United States. During the 1960s, when fertility was higher, a community could lose population through migration and still experience growth through natural increase. Today, migration is the primary determinant of the changes in local population size and thus of the social, political, and economic strains entailed in population change.

A. RECENT AND FUTURE CHANGES

1. NONMETROPOLITAN REVIVAL

For most of the Nation's history, Americans have tended to move from nonmetropolitan areas to metropolitan areas, but since 1970 more Americans have been moving away from metropolitan areas than into them. The resurgence of population growth in nonmetropolitan areas can be attributed to two phenomena: urban sprawl and "rural renaissance." The first is the expansion of an SMSA into neighboring rural areas. (An SMSA, or Standard Metropolitan Statistical Area, typically consists of a county containing a city of at least 50,000 inhabitants, plus surrounding counties that are metropolitan in nature and integrated with the central county by commuting.) "Rural renaissance" refers to increasing migration to towns and counties that are entirely rural and not linked to an SMSA. Table 11 shows recent population growth and net migration for the United States by type of county.

TABLE 11.—POPULATION CHANGE BY METROPOLITAN STATUS: 1960-1976

	Average annual percent population change		Average annual rate of net migration ¹	
	1960-70	1970-76	1960-70	1970-76
Total, United States.....	1.3	0.9	0.2	0.2
Metropolitan counties ²	1.7	.8	.5	.1
Nonmetropolitan counties.....	.4	1.3	-.6	.7
Adjacent counties ³	.7	1.4	-.3	.8
Nonadjacent counties.....	.1	1.2	-.9	.6

¹ Net migration rates result from subtracting the number leaving an area from the number arriving and dividing by the population at the beginning of the specified period.

² Metropolitan status as of 1974.

³ Nonmetropolitan counties adjacent to SMSAs.

Source: Derived from data in statement by Calvin L. Beale before the U.S. House Select Committee on Population, Feb. 9, 1978. His data are based on the 1970 Census and Current Population Reports, Bureau of the Census.

Because of the recent low birth rate, the movement to nonmetropolitan areas has had a major impact on the Nation's major urban centers, many of which are older, northern cities. In the 1960s, only Pittsburgh among the 25 largest SMSAs lost population; by 1975, eight more were declining (Cincinnati, Cleveland, Los Angeles-Long Beach, Newark, New York, Philadelphia, St. Louis, and Seattle-Everett). By 1975, one in six of all 259 metropolitan areas in the United States had lost population, and one in three metropolitan residents was living in an area of population decline. Even within growing metropolitan areas, central cities themselves are not necessarily gaining population. Counting all moves within and between SMSAs, central cities lost 2.8 million people to the noncentral parts of SMSAs during the March 1975-March 1977 period.

Population loss is not a phenomenon limited to northern cities. In the South, which recently has grown rapidly overall, the experience of cities has been mixed. Houston and Fort Lauderdale have been increasing in population, both within the city limits and in the surrounding areas, while Atlanta and Dallas have declining central cities but growing SMSAs. In addition, there are some places in the South which recently lost population both in the central city and in the SMSA as a whole—Savannah, Georgia, and Pine Bluff, Arkansas, for example.

2. REGIONAL REDISTRIBUTION

The 1970s have seen major redistributions of population among the Nation's four regions. From 1970 to 1975, the South's population increased by 5.1 million people, in contrast to 3.4 million in the previous five-year period. On the other hand, the North Central region's population increase has slowed considerably, and the Northeast has had very little growth.

Figure 15 shows the Census Bureau's regional divisions. Table 12 divides the population change of the four regions into natural increase (births minus deaths) and net migration components. The Northeast provides an excellent example of how a shift in net migration, in conjunction with a lower birth rate, can combine to halt population growth in a region. In contrast, despite even more severe migratory losses in the North Central region than in the Northeast, somewhat higher rates of natural increase have continued population growth in the North Central region.

FIGURE 15

Map of the U.S., Showing Census Divisions and Regions



Source: U.S. Bureau of the Census.

TABLE 12.—POPULATION CHANGE COMPONENTS BY REGION (MILLIONS): 1950-1975

(NI = natural increase; NM = net migration)

Region	1950-55		1955-60		1960-65		1965-70		1970-75	
	NI	NM	NI	NM	NI	NM	NI	NM	NI	NM
Northeast.....	2.3	0.4	2.6	0.0	2.3	0.3	1.6	0.1	1.0	-0.7
North Central.....	3.5	.4	3.9	-.7	3.3	-.8	2.3	.1	1.8	-.8
South.....	4.5	-1.6	4.7	.3	4.2	.3	3.0	.4	2.5	2.6
West.....	1.9	1.9	2.2	2.0	2.2	1.7	1.7	1.1	1.5	1.4
United States.....	12.1	1.0	13.2	1.7	12.0	1.5	8.7	1.7	6.8	2.5

Source: U.S. Bureau of the Census, Current Population Reports, Series P-25, no. 640, November 1976.

Larger numbers of migrants from the Northeast and North Central regions have been moving to the South and West, especially into the South Atlantic and Mountain States. Before 1970, population movements to Florida accounted for a substantial proportion of the positive net migration for the South. However, from 1970 to 1975 all but one of the southern States, Louisiana, experienced positive net migration. Florida has continued to lead the way with a population growth of 22.9 percent for 1970 to 1975.

Also contributing to the net influx to the South since 1970 is the fact that the numbers of black migrants to and from the area are almost in balance, in contrast to the out-migration of blacks prior to 1970. A third factor in southern population growth is a relatively high rate of natural increase. Even if no migration had occurred, the population would have increased more rapidly in the South than in the North.

In the West, California no longer receives most of the newcomers to the region, as it did prior to 1965. Between 1960 and 1965 the other twelve States had a net influx of 200,000 people, less than one-seventh of California's share. In comparison, between 1970 and 1975 the twelve States gained one million through net in-migration, more than twice the gain for California.

3. FUTURE POPULATION MOVEMENTS

We know that the U.S. population will grow by 40 to 50 million people by the turn of the century, but it is difficult to say where they will live. Most likely, the migration from East to West—continuous throughout U.S. history—can be expected to continue. However, it remains to be seen whether the recent movement from North to South represents a new long-term trend rather than a temporary response to the recent severe economic recession. During the Great Depression, unemployed persons in industrial areas returned temporarily to their places of origin where family connections and marginal jobs existed.

The future pattern of metropolitan-nonmetropolitan migration also is difficult to predict. The recent trend toward "rural renaissance" may also be due largely to the Nation's economic situation and may be reversed as the economy improves. To be sure, there has been no indication of such a response, as the recession has abated. Perhaps tastes have truly changed, and rural living has become more attractive to the American people. Time will tell.

Part of the problem of predicting migration lies in the reality that it is a two-way phenomenon, consisting of out-migration and in-

migration. Net migration statistics result from subtracting one group from the other; there is no such person as a "net migrant." Consequently, the Bureau of the Census calculates in-migration and out-migration separately when making its population projections for States and metropolitan areas.

Out-migration is projected for each subnational area using rates based on the responses to the 5-year retrospective question on migration in the most recent census. The total amount of out-migration from all the areas is then allocated as in-migration to the various areas on the basis of proportions derived from the census data. Of course, such a projection procedure assumes that past migration trends will continue, a very tenuous assumption indeed. The farther into the future the projection is being made, the more likely it is that error will result.

An alternative approach is to base net migration projections on projected socioeconomic data. In its population projections for 173 economic areas in the U.S., the Bureau of Economic Analysis assumes that, except in the case of the elderly, the major motivating factor in migration is economic opportunity. First, employment in an area is projected on the basis of projections of labor earnings, then net migration and population are projected on the basis of the employment figures. More work needs to be done on this method, though, because the causal relationships between the variables have not been completely identified.

B. CAUSES OF POPULATION REDISTRIBUTION

More than one American in six moves in a typical year. Table 13 shows mobility in the U.S. by age and by the type of boundaries crossed from March 1975 to March 1976. Over two-thirds of the moves do not involve changes in county of residence, and many may involve only a change of address and not a change in employment. Even so, the moves of 36 million people have serious consequences for the places involved, because different types of people stay and go.

TABLE 13.—U.S. GENERAL MOBILITY, BY 10-YEAR AGE GROUPS: MARCH 1975 TO MARCH 1976

[Numbers in millions]

Age	Different house in the United States (Movers)									Movers from abroad
	Total	Same house (Nonmovers)	Total	Same county	Different county					
					Total	Same State	Different State			
							Total	Contiguous	Noncontiguous	
Total, 1 year and above.....	298.1	171.3	35.6	22.4	13.2	7.1	6.1	2.0	4.2	1.1
1-9.....	29.8	23.0	6.6	4.3	2.3	1.2	1.1	.4	.7	.2
10-19.....	40.6	34.5	5.9	3.7	2.1	1.1	1.0	.3	.7	.2
20-29.....	26.0	22.9	12.8	8.0	4.8	2.7	2.1	.7	1.4	.4
30-39.....	25.6	20.8	4.6	2.9	1.8	.9	.9	.3	.6	.1
40-49.....	22.7	20.3	2.3	1.4	.9	.4	.4	.1	.3	.1
50-59.....	22.4	20.7	1.7	1.0	.7	.4	.3	.1	.2	0
60-69.....	17.2	16.1	1.1	.7	.4	.2	.2	.1	.1	0
70+.....	13.6	12.9	.7	.4	.3	.2	.1	0	.1	0

Source: Derived from data from Bureau of the Census, "Geographic Mobility: March 1975 to March 1976," Current Population Reports, Series P-20, January 1977.

1. WHO MOVES AND WHY?

At present half of all Americans who move are either adults age 18 to 29 or young children moving with their parents. In fact, close to 40 percent of all people in their early twenties move each year. They are completing their education, entering the labor market for the first time, serving in the military, marrying and forming families. Although migration rates decline with age after this peak in the twenties, the migration of the elderly is important because their destinations are concentrated in warm climate areas and such other specific areas as the Ozarks, northern New England, and the upper Great Lakes regions. The moves of the older population increase demand for certain types of public services which may not be provided in these areas.

Typically, migrants are better educated than non-migrants. White collar workers, especially professionals, are more likely to move than manual workers. Migration rates are approximately the same for blacks and whites, but blacks move more frequently within the same SMSA and since 1970 have not shown the same tendency as whites to move to nonmetropolitan areas.

In general, people move to improve their well-being. Some people are "pushed" from their original place of residence because of adverse conditions there. Others leave primarily because they perceive conditions as being significantly better elsewhere, "pulled" by advantages of the new place, as when retirees move to recreational areas. Both push and pull factors can operate simultaneously. For example, a reason frequently given by young couples with children for moving from the city to the suburbs is that the schools in the city are bad and the schools in the suburbs are good.

Distance is another factor which influences migration decisions. One of the usual findings of migration studies is that short-distance moves are more common than long-distance moves. The costs of the move—including direct costs, costs of information, opportunity costs, and psychological costs—are related to the distance moved. Also, the more distant the move, the more likely it is that attractive opportunities will intervene.

There is debate about just how much local economic conditions, such as unemployment rates, influence migration decisions of individuals. In a recent study of the mobility of married couples, Dr. Julie DaVanzo of the Rand Corporation concluded that those who are unemployed do in fact respond to the relative amount of unemployment in their area of residence, whereas others who are employed either do not respond or else respond in the direction opposite to that expected—that is, they move to a place where the unemployment rate is even higher.

Unemployed workers are more likely to move than employed workers who are satisfied with their jobs, but the migratory response to unemployment is weak and uneven. Blue collar workers are more likely to be unemployed, but they are also less mobile than others. Some people are apparently poorly informed or even totally unaware of the choices of employment and residence that are available to them.

Dr. DaVanzo told the Select Committee that, in the mid-1960s, over half those living in depressed areas thought that their living

conditions were as good as or better than anywhere else, and one-third thought that local employment conditions were better than elsewhere. She also noted that, when some of the unemployed did move, they returned to their original place of residence fairly soon. These "ping-pong" migrants often made their initial move on the basis of faulty information, relying only on the advice of friends and relatives who usually lacked solid information on job possibilities in the new area.

Another question of interest is the possible influence that the availability of welfare benefits may have on an individual's decision to locate in one particular area or another. Despite widespread belief that low-income people move to New York City to qualify for its generous public-assistance allowances, recent studies show that in fact the image of the welfare-seeking migrant is largely a myth. The availability of public assistance in one place tends to keep recipients from moving on to another place. In effect, the higher proportion of welfare recipients in cities is due to low out-migration rather than to migration into the area.

2. MOVEMENTS OF ECONOMIC ACTIVITY

There is a strong positive relationship between migration and the growth of employment. In the 1970-75 period, non-agricultural employment grew in the Sunbelt (South Census Region, excluding Maryland, Delaware, and Washington, D.C.) at a rate twice that of the United States as a whole and almost thirteen times that of the Northern Industrial Tier (the five East North Central States, plus the Northeast Census Region except Maine, Vermont, and New Hampshire). Similarly, the economic base of the West has expanded since 1970, even though costs of production are not always lower there. For example, even after adjusting for industry and occupational mix, wages and transportation costs are relatively high in such rapidly growing cities as Phoenix and San Jose.

Although it is not yet entirely clear whether jobs or people move first, recent studies have found that the migration of firms, though stimulating newspaper headlines, has not been an important component of employment shifts. Instead, gains and losses have been due to the rapid expansion of existing firms or the "birth" of new firms in the South and West, while firms are cutting payrolls or "dying" at approximately the same rate in these areas as in the rest of the country. Table 14 shows the various components of regional employment change for the period 1970 to 1972.

TABLE 14.—AVERAGE PERCENTAGE EMPLOYMENT CHANGE BY REGION: 1970-72

Area	Net change	Type of transition of firm					
		Births	Deaths	Expansion	Contraction	In-migration	Out-migration
Northeast.....	-6.3	4.6	-12.2	11.3	-9.8	0.4	-0.5
North Central.....	-3.2	4.9	-10.7	11.7	-9.1	.2	-.2
South.....	.2	7.6	-12.3	14.1	-9.3	.3	-.2
West.....	-1.9	7.3	-14.1	15.3	-10.5	.2	-.1

Source: Peter M. Allaman and David L. Birch, "Components of Employment Change for States by Industry Group, 1970-72," Working Paper No. 5, Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University, 1973.

As with population, there has also been a recent shift of economic activity away from metropolitan areas, as shown in Table 15. It is

TABLE 15.—NET PERCENTAGE CHANGE¹ IN EMPLOYMENT FOR METROPOLITAN AND RURAL AREAS BY ECONOMIC SECTOR, 1970-1972

Industry	Net percentage change, 1970-1972 for—	
	Metropolitan	Rural
Agriculture.....	-3.6	-1.7
Manufacturing.....	-10.0	-5.5
Other industry.....	-2.7	.2
Trade.....	2.7	14.0
Service.....	1.6	8.3
Total.....	-3.9	1.5

¹ These net change figures have not been adjusted for a known underreporting of new firm formation. They are nevertheless consistent, although low, across the board.

Source: David L. Birch, "Regional Differences in Factor Costs: Labor, Land, Capital, and Transportation," draft.

not easy to explain the recent shifts in economic activity and population within the United States. Cost differentials between regions do not explain the change. Dr. Charles Leven, director of the Washington University Institute of Urban and Regional Studies, has suggested:

... it is the maturity of metropolis itself, stemming from deeper economic and technological causes, that has been the main stimulus of the population redistribution, with the lure of the sun and related environmental considerations as factors of secondary importance, at most.

In particular, he argues that changes in the technology of production and transportation have contributed to the loss of comparative advantage of the big city as a location of economic activity.

On the other hand, Dr. Anthony Downs, senior fellow of the Brookings Institution, sees the shifts resulting not so much from maturation of cities as from the difference "between the density at which older cities were built (which was before the automobile age) and the density at which cities are now being built." People today prefer low-density housing to higher density, and for some firms, facilities in low density areas are more efficient and desirable. Rising real incomes and the greater use of cars and trucks have enabled both firms and households to satisfy their preferences.

3. GOVERNMENT INFLUENCES

Do the decisions, activities, and programs of the Federal Government play a part in encouraging or facilitating the movement of population and firms? Researchers have studied whether Federal spending has influenced migration between regions of the United States through its impact on per capita income and employment opportunities. Dr. Carol Jusenius and Dr. Larry Ledebur, while visiting scholars at the Economic Development Administration of the Department of Commerce, examined the comparative levels of economic development and of Federal spending in the so-called Sunbelt and

Frostbelt regions, as shown in Table 16. They concluded that, even though Federal taxes are smaller and Federal expenditures are larger per capita in the South, Federal intervention has not eliminated regional income differences.

TABLE 16.—REGIONAL COMPARISONS OF FEDERAL INFLUENCES ON ECONOMIC DEVELOPMENT

	Sunbelt-South ¹	Northern industrial tier ²	United States	Total
Per capita personal income.....	\$ 176	\$6,265		\$5,902
Per capita Federal taxes.....	1,188	1,560		1,412
Per capita Federal spending.....	1,156	1,224		1,412

¹ South Census Region, excluding Maryland, Delaware, Washington, D.C.

² The five East North Central States, plus the Northeast Census Region except Maine, Vermont, and New Hampshire.

Source: C. L. Jusenius and L. C. Ledebur, "A Myth in the Making: The Southern Economic Challenge and Northern Economic Decline," Economic Development Administration Research Report, November 1976.

Similarly, Dr. Luther Tweeten of Oklahoma State University has compared Federal outlays per capita in fiscal year 1976 in metropolitan counties and in nonmetropolitan counties, as shown in Table 17. With respect to expenditures for human resources development—the largest category—Dr. Tweeten found that nonmetropolitan areas are not receiving Federal aid commensurate with their relative need, according to various socioeconomic measures. Thus, this analysis indicates that Federal expenditures are not providing an incentive to move to nonmetropolitan areas.

TABLE 17.—FEDERAL EXPENDITURES PER CAPITA BY TYPE OF COUNTY: FISCAL YEAR 1976

	Nonmetropolitan	Metropolitan
Human resource development.....	\$742	\$776
Housing.....	59	105
Community and industrial development.....	153	132
Agriculture and natural resources.....	90	23
Defense and space.....	219	468
Other.....	8	41
Total.....	1,271	1,545

Source: Testimony by Luther Tweeten before the U.S. House Select Committee on Population, June 7, 1978.

Has the Federal Government, then, had no role in the movement of population within the United States? Though evidence of such a role is scanty, the Federal Government has affected migration indirectly through various programs. One frequently cited example is the influence on migration of the interstate highway system. Researchers have found a large positive correlation between the construction of the system and county population changes during the 1960-1970 period. In particular, creation of intersections spurred growth in counties with urban populations in the 30,000 to 150,000 range.

Several researchers have examined the effects of specific Federal taxes and subsidies on migration. Drs. George Peterson and Thomas Muller of the Urban Institute suggest that, "Systematic Federal subsidies for new capital investment . . . have tended to speed up the

process of regional and metropolitan adjustment, by encouraging the premature scrapping of older facilities." President Carter's 1978 tax proposals explicitly recognize this factor by making rehabilitated as well as new structures eligible for investment tax credit.

Similarly, deductibility from Federal income taxes of mortgage interest and property tax payments encourages home ownership and, consequently, moves from the cities to the suburbs. The growing popularity of cooperative and condominium ownership in cities could partially negate the suburban bias of this tax provision. Dr. Luther Tweeten told the Select Committee that Federal assistance to rural areas in the form of grants and concessional loans for such services as water, sewers, and electric power makes no distinction on the basis of ability to pay and therefore also encourages movements to the countryside. These programs "encourage sprawl, high costs of services to low density settlement patterns, unsightly development and excessive energy use (e.g., gasoline for commuting)," he said.

These are only a few examples of the indirect impact of the Federal Government on the movement of population within the United States. Policies which were not intended to affect migration nevertheless appear to have done so. Although consideration was not given to the social costs and benefits associated with migration when these programs were developed, the consequences of these population movements must now be considered.

C. AREAS LOSING POPULATION

Whether loss of population is a blessing, a disaster, or just another stage in a locality's development is determined by the composition of the population change and the community's response to the change. More often than not, however, areas are not well prepared to respond to population decline, our Nation having been more accustomed to growth. Dr. William Alonso, director of the Center for Population Studies of Harvard University, cautioned that our society should give at least some attention to the problems of decline because all prior academic and business thinking has focused on growth.

1. CONSEQUENCES OF POPULATION LOSS

Because migrants generally are better educated and have higher incomes than non-migrants, their moves have substantial social and economic impact on both their old and new places of residence. Areas experiencing prolonged outward movement generally have an underrepresentation of young adults and an overrepresentation of late middle-aged and elderly people, as younger people leave and older people stay behind. This older age structure, as well as the decrease in per capita income and in employment typically associated with it, has an adverse effect on the personal tax base.

With general economic decline, the corporate tax base also erodes. Usually, however, there is no commensurate reduction of demands for public service. Indeed, per capita outlays for local government services are higher in declining cities than in growing cities. Barriers to cutting public service costs in localities with declining populations include inflation, collective bargaining, and public debt commitments.

Net movement within an SMSA from the central city to the periphery of the SMSA can lead to jurisdictional problems, especially where annexation of outlying areas is not a practical possibility. Although an SMSA may be integrated in one sense through commuting and use of central city amenities by suburbanites, the less affluent residents of the central city may bear a disproportionate share of the taxation for services used by all the area's residents. Thus, the political realities of some SMSAs may be economically detrimental.

Adjusting to fluctuating student enrollment caused by variations in fertility is made more difficult by migration of families into or out of school districts. Some school districts with central city populations find themselves confronted by a declining tax base in much the same fashion as the city governments themselves. Their problems are complicated by the tendency of State governments to base their contributions to school systems on enrollment figures. Some districts, therefore, face the problem of reduced assistance at the very time that their own resources are diminishing.

Loss of population slows demand for housing and other capital investments that strongly affect the economic health of the community. Departing wage earners take with them their expenditures for goods and services. This loss, in itself, can weaken the economic vitality of a community, reduce the number of employed people, raise unemployment rates and, in time, reduce State and local government revenues.

Formulas for the distribution of Federal aid among localities and regions typically depend, in part, on the size of the population. If a region loses population, it is likely also to lose funds at a time when it needs Federal assistance most. As Dr. David Birch, director of the Program on Neighborhood and Regional Change at the Massachusetts Institute of Technology, pointed out:

When we formulated all of these policies and formulas and everything, all the notions were based on growth. . . . So, now, all of a sudden, many cities are faced with the prospect of going back down through a threshold that was never intended as a down one.

Another implication of migration is its effect on the distribution of political power. If migration continues at the present pace, at least eleven seats in the House of Representatives will be reapportioned after the 1980 Census. The Northeast and East North Central states will lose seats, with New York alone expected to give up four. The South will probably gain as many as seven seats and the West four. As a result, the South and West will together represent a majority of seats in the House for the first time. Similarly, there has been a redistribution of political power from central cities to the suburbs and rural areas, as the recent population shifts have occurred.

2. RESPONSES TO POPULATION LOSS

How should communities respond to population decline? Should an effort be made to reverse the direction of population movements? Would resources be better spent ameliorating the negative effects of population decline? Should both courses be pursued?

a. Balanced National Growth

Most experts believe it would be very difficult to reverse the direction of population movements. For example, Dr. Leven stated in his testimony before the Select Committee:

... meeting the human needs in declining areas by reversing population redistribution, however desirable it might appear, is unlikely to be very effective. The technological and economic forces that would have to be overcome are powerful; they are persistent, and they are pervasive.

Dr. Birch proposed:

... a policy aimed at helping people who can adapt to do so, and at minimizing hardship for those who cannot easily change with the times. Such a policy should not be confused with a policy of rebuilding declining areas to their previous heights.

Dr. Roy Ball of the Metropolitan Studies Program at Syracuse University stated:

Revitalization, if it means restoring cities to their previous levels of population and economic activities, just is not in the cards. Compensation, if it means bolstering the fiscal capacity of local governments to take account of the unfavorable effects of population and economic decline, would make more sense as a strategy.

Consequently, proposals for "balanced national growth" may not be the most effective way to respond to changing population distribution within the United States. First, population decline, although concentrated more in some areas of the country than others, is not totally a regional phenomenon. Some localities which are losing population are located in a growing region. Regional solutions would not necessarily address the specific circumstances of different local areas within a region.

Second, it is very difficult to measure regional well-being. Should measures of the *level* of economic development or the *rate* of economic development be compared? Are simple measures of population growth or decline better than more sophisticated measures of the composition of the population change? As Dr. Alonso noted, "... nobody has any operational idea of what balanced growth means. So that the policies have no real basis in spite of there being legislation which says that balanced growth is a national goal."

Third, such policies probably would not effectively address the pressing needs of the disadvantaged populations left behind in declining areas. Finally, they might not even succeed in providing relief to the needy areas because, to win approval of the legislation, the programs probably would have to provide benefits for other areas. The trade-off between "targeting" funds for their most effective use and "spreading" funds in order to assure support for the programs themselves is inherent in the formulas that allocate most forms of inter-governmental financial assistance.

b. Aid to Individuals Left Behind

The witnesses heard by the Select Committee agreed that priority must be given to helping individuals either adjust to their changing environment or pursue opportunities elsewhere. They emphasized that a minimal level of social and public services should be maintained during the transition periods to those people who are not mobile and who do not adapt easily. The elderly provide a perfect example of a group of people with a limited set of options who suffer most from the curtailment of services in response to tax and expenditure cut-backs.

One way in which the Federal Government could help communities with seriously declining population and changing age composition would be the assumption of greater responsibility for those services with a larger income redistribution component. For example, greater Federal responsibility for welfare payments would ensure support for those unable to move; also evidence from negative income tax experiments suggests that federalizing welfare would encourage individuals to investigate opportunities for self-support in new locales without fearing a loss of benefits if unsuccessful.

Another potential role for the Federal Government in aiding individuals in areas of declining population is through employment programs, both public and private. The Comprehensive Employment and Training Act (CETA) program has met with considerable success, with approximately 2.4 million persons participating in fiscal year 1977. The program, however, has been criticized for insufficiently improving the future employability of trainees. Another problem has been the large number of eligible persons relative to the jobs available through the program. The National Commission for Manpower Policy has recommended that additional resources be allocated to areas with concentrations of the structurally unemployed (those who have been unemployed for at least 15 out of the preceding 20 weeks), as well as that funds be provided on the basis of individual eligibility.

The Manpower Commission has also urged the Administration to encourage greater involvement of the private sector in meeting the Nation's employment objectives. In presenting his National Urban Policy, the President proposed a three-year program of labor-intensive public works to renovate public facilities. It is estimated that the program, which would be funded at \$1 billion a year, would create 54,000 private jobs directly, half of which would be reserved for disadvantaged workers referred by the CETA system.

Dr. Tween testified that, in rural areas at least, it is more cost-effective to generate a permanent job through aid to private industry than to provide short-term employment through public programs. He suggested giving inducements, such as tax write-offs and wage supplements, to private enterprise to hire more people in areas with high unemployment or underemployment. Also, Dr. Birch suggested that efforts not be concentrated solely on the manufacturing sector, which has recently provided fewer employment opportunities while employment in the service sector is growing rapidly. The needs of this latter sector for working capital, as opposed to plants and capital equipment, should be given greater attention, he said.

c. Relocation Assistance to Individuals

Another potential role for public policy, as suggested by Dr. DaVanzo:

... would be to strengthen the economic effectiveness of migration by enabling unemployed potential migrants to plan more effectively and by supplying them with information to broaden their range of choice of potential destinations considered.

Of course, for the underemployed or those dependent on public assistance, the risks involved in making a move are high when there is no assurance of a better situation in their new place of residence. In these cases, in addition to providing better information to the potential migrants, giving transitional assistance—providing some sort of financial back-up so that a family need not risk all its security on an uncertain move—could prove helpful. Also, the Federal Government could help develop training programs linked to job opportunities in growing localities. In her testimony, Dr. DaVanzo reported:

All major western European countries now have some form of subsidy to assist persons migrating from rural to urban areas. Experimental relocation assistance programs in the United States (conducted between 1965 and 1969 under the auspices of the Department of Labor) have demonstrated that many unemployed persons willing to relocate can be helped to find jobs and increase their earnings elsewhere.

d. Aid to Local Governments

Of course, giving priority to the needs of individuals affected by population decline does not imply the neglect of the problems facing the communities losing population and their governmental bodies. Many of the ways in which the Federal Government could act to ameliorate the negative impact of these changes on individuals could be instituted only through support to local governments. Furthermore, the quality of services provided solely by these governments obviously has a strong impact on the well-being of the individuals in those areas. The Select Committee's witnesses stressed, however, that such aid should assist the governments in declining areas in making fiscal adjustments only during a clearly defined transition period, so that local governments do not come to depend permanently on Federal aid.

The Federal Government could also modify its expenditure policies to aid areas which are losing population. For example, in his National Urban Policy, the President indicated that central cities will be given priority over outlying areas in the location of Federal office facilities. The Carter Administration also proposes to use Federal procurement contract set-asides to stimulate economic growth in areas with economic need.

e. Local Responses

Local governments themselves can institute some policies to deal with population decline, although as mentioned before, it is almost impossible completely to reverse the pattern of recent population flows. In particular, policies can be instituted to maintain or increase

economic activity. As discussed earlier, migration of firms has been minimal, so it may be fruitless to try to lure businesses from other areas. However, it is important to encourage businesses to start up or expand in the locality. Dr. Birch presented some specific suggestions in the Committee hearings:

When you ask entrepreneurs in New Hampshire why they are in New Hampshire and not Massachusetts, they immediately give you the same list every time. The list includes the fact that there is no tax loss carry-forward legislation in Massachusetts. An entrepreneur who starts up a business in Massachusetts gets taxed at the full rate the first year he makes a profit regardless of the losses incurred up to that point.

The Massachusetts unemployment compensation system is very punitive, as is the workmen compensation system. The personal income tax is very offensive to managers, and it is managers who are making entrepreneurial location decisions. The sales tax in Massachusetts is considered to be very onerous. There is a lot of very similar anti-business legislation in the cities. If places like Massachusetts are going to decline gracefully, I think they are going to have to tip the balance back in favor of the entrepreneur before the entrepreneurs are all gone.

It must be remembered, however, that the local governments walk a tightrope in trying to make their areas attractive to business, while raising enough revenue to fund services that their citizens need. As Dr. Bahl testified:

The danger is that if taxes are important, and you want to affect industry location decisions, you probably ought to cut personal income tax. . . . but that is the most progressive tax in the system. The kinds of reductions that are likely to have a positive effect are reductions that will alter the distribution of income in the wrong way.

Of course, the fiscal situation of central cities could be improved substantially if the suburban tax base could be tapped more fully. This alternative has not proved to be politically feasible in the northern United States but has been adopted in Florida, Oklahoma, Tennessee, Virginia, and other States.

To deal with lowered housing demand and to influence location decisions of households as opposed to firms, there are several possible strategies which can be employed by local governments. One is the revitalization strategy, which many urban analysts see as infeasible and, in some cases, undesirable. A complete revitalization—that is, returning the population to its previous peak—may serve to keep too many units in the city's housing inventory and possibly result in further declines in property values. The revival of certain key areas of a city may be more effective. Dr. Anthony Downs suggested a "spread-out thinning strategy," which he defined as "removing a few units from the inventory in many different neighborhoods, so no one experiences any decline in property values." He cited as an example the experience of Akron, Ohio, which has outlawed housing units formerly located in converted garages behind homes.

In general, Dr. Downs urged the development of public policies which strengthen non-economic linkages within neighborhoods, because the actions of individual homeowners with respect to the upkeep of their housing have an effect on the value of other housing in the same neighborhood. Therefore, it may be necessary for government to intervene to ensure that the social, as well as private, costs and benefits of neighborhood change are considered. Dr. Downs recommended that the Federal Government help localities develop their own "collective control" mechanisms. In particular, he suggested that the Federal Government aid these areas through block grants, allowing maximum local discretion, rather than through categorical programs.

D. AREAS GAINING POPULATION

1. CONSEQUENCES OF POPULATION GAIN

Areas growing in population enjoy increased tax revenues and higher spending, which stimulate the local economy. However, growth can be as painful as decline. Rapid growth means an increase in the demand for services which governments must meet if existing public services are not to be overburdened. For example, burgeoning school enrollment necessitates the construction of new facilities. Small growing communities, which relied on part-time police officers and volunteer firefighters in the past, may need to hire new public workers. New home construction requires expansion of drainage, sewer, transportation, and water systems.

As the need for services grows with the community, so does the unit costs of these services. Among the reasons for these higher unit costs are higher average wages for municipal employees in growing communities than in stable communities and diseconomies of scale in providing such public services as police and fire protection, road maintenance, and sanitation services other than sewerage.

The growth of nonmetropolitan areas also raises jurisdictional issues. Although only approximately 30 percent of the U.S. population lived in nonmetropolitan areas in 1974, these areas contained 85 percent of the county governments, 80 percent of the townships, and 70 percent of the municipalities. The Advisory Commission on Intergovernmental Relations has reported that, in comparison to metropolitan governments,

... nonmetropolitan governments provide fewer services, have less administrative leadership capacity, tend toward diseconomies of scale, have inadequate financial bases, and use intergovernmental cooperation agreements less frequently.

Therefore, the much-heralded "rural renaissance" may have some negative implications for government efficiency.

In addition, increased population growth can exert pressure on the environment and resources of growing areas. Rivalries over water supply are arising in areas of the South and West. Increased industry and auto use have already compounded air pollution problems in cities such as Denver and Houston. The move to smaller cities and towns may also deplete resources. Rural dwellers are far more depend-

ent on automobiles for transportation and travel further to work or town, thereby contributing to increased demand for oil while the Administration is seeking to reduce such demand. Concern is growing, too, that increased numbers of people can upset the natural ecology of some particularly delicately balanced areas, such as the Florida Peninsula.

2. RESPONSES TO POPULATION GAIN

a. Federal Response

What, if any, should be the role of the Federal Government in aiding areas with growing population? First, there could be greater concern about the impact of various Federal programs on migration decisions when these programs are first proposed. Second, in cases where the Federal Government places an unfair burden on a local community through its policies, some form of compensation could be considered. For example, such compensation is currently provided under section 608 of Public Law 93-552, which is intended to ameliorate fiscal problems related to the construction of a large defense facility in Kitsap County, Washington. Another example of special compensation is the U.S. Coastal Zone Management Act of 1972, as amended in 1976, which aims to offset adverse economic and environmental impacts due to energy-related population growth.

Dr. Tweeten suggested that in rural areas:

... the Federal government need not pour a lot of money into the problems of growth. The Federal input can take the form, largely, of an expansion in extension activities of the type we know so well in agriculture. Specifically, the Cooperative Extension Service, which is very active in rural development as well as agriculture. . . . They (rural communities) need some help from the outside in terms of being able to organize, coordinate, and plan their activities.

b. State and Local Responses

The State of Hawaii has been particularly active in trying to limit its population growth. Since 1960, Hawaii's population growth rate has been about twice that of the Nation as a whole. Since 1970 close to 40 percent of that growth has been due to net immigration of aliens, a matter of special concern, given Hawaii's limited physical size. Governor George Ariyoshi has proposed that the Federal Government place restrictions upon the number of immigrants who can settle in any given State and upon migration between States of those who have recently moved to the United States.

Officials of the State of Hawaii are especially troubled by the costs for welfare, housing, and unemployment benefits for new residents who are not able to support themselves. Since the Supreme Court has ruled that the right to move from one State to another is covered by the 14th Amendment, the Constitution would have to be amended to implement a proposal to limit migration, and such action is unlikely in the foreseeable future. However, greater Federal assistance, especially for social services, might be considered as a way to solve part of the problems, as was mentioned with respect to the problems of areas losing population.

In addition to considering limits on growth, Hawaii has done much to study and manage its growth. In 1961, the State adopted a comprehensive land use law to help preserve agricultural land from urban sprawl and to protect public recreational lands. Various commissions have been established to analyze the consequences of population growth. Studies of "carrying capacity" (how large a population the resources of the State can support) and projections of population and service needs have been supported by the State.

Among the actions which have been proposed are promotion of employment opportunities for residents, restrictions on public assistance to newcomers, and controls on the rate of growth and location of tourist accommodations. As a result of all this effort, on May 22, 1978, Hawaii became the first State to adopt by statute a State plan for future long-range development. Mrs. Eileen Anderson, Director of Finance, State of Hawaii, testified that, of the actions suggested to the State legislature:

... proposals designed to reduce and stabilize overall population growth and those designed to foster selected areas of economic growth fared considerably better than did measures designed to affect population distribution, either on or among the islands.

Florida is another State that has tried to manage its population growth. Severe drought in southern Florida in 1970 and 1971 precipitated the enactment in 1972 of legislation related to population growth, including the Florida Environmental Land and Water Act of 1972. The act identified specific geographic areas of critical concern to the State and established principles to guide the development of those areas; however, litigation has slowed implementation of these guidelines. A second component of the 1972 act was the establishment of a review procedure for large developments of regional impact (DRI). After some initial success, developers eroded its effectiveness by keeping their developments just small enough to escape DRI review. Further legislation has included the Local Government Comprehensive Planning Act of 1975 which requires that by July 1, 1979, all local governments prepare and adopt a plan for growth and development. This year a comprehensive State plan was submitted to the legislature.

The experience of Florida illustrates the importance of intergovernmental effort in attending to issues of growth management. However, Florida's story is not a completely successful one. Florida's growth management effort has suffered from a lack of regional planning and coordination of various pieces of legislation. Dr. Richard RuBino, associate professor of urban and regional planning at Florida State University, also noted in the Committee's hearings "a slowdown in terms of State growth management activity" and urged increased Federal attention to growth management and analysis of mobility.

In particular, he called for Federal aid to localities which lack the funds or expertise to prepare comprehensive, high-quality plans required by the State's Local Government Comprehensive Planning Act. Federal monies allocated under section 701 of the Comprehensive Planning Assistance Act of 1954 have been used by some of the governments, but an expansion of this type of assistance would be helpful, according to Dr. RuBino.

Several cities and towns that have felt inundated by new settlers are seeking to regulate further increases in population. Boca Raton, Florida, placed a cap on the number of housing units; a Federal court, however, found the policy exclusionary and unconstitutional. Petaluma, California, on the other hand, was upheld by Federal courts in instituting its Residential Development Control System of 1972, which provides for review of large developments and sets yearly quotas for types of development in each section of the city. Because ten percent of the building permits must be for low- and moderate-income housing and because there is no arbitrary population cap, the plan was judged non-exclusionary.

Another possible response to rapid population growth is to make residential construction contingent upon the provision of additional educational, sewage disposal, and water supply facilities. Such a policy shifts from old to new residents a large part of the cost of the additional public service that the newcomers require.

In conclusion, the economic and social consequences of population movements are too great to legislate population redistribution even at the State and local levels. On the other hand, governments cannot avoid dealing with the consequences of migration.

E. DATA AND RESEARCH

Better planning for and accommodation of population movements can be accomplished through improved knowledge of current migration. Several of the witnesses testified that more information is needed on how often people move, to and from what places, and their circumstances before and after the move.

Currently, the question asked on the Census of Population gives information on change of residence from five years ago. As a result, movement is often missed, as a person may move away and then return within the five-year interval. The Current Population Survey gives more frequent information on migration, but because of limited sample size there is no geographical detail.

Dr. David Birch suggested to the Select Committee that one way to get more detailed, current information on migration would be to have the Census Bureau survey 20 percent of the population every two years rather than 100 percent of the population every ten years. Of course, a complete enumeration every ten years is required by the Constitution for purposes of apportioning political representation.

Dr. Julie DaVanzo also noted that:

Another problem is that census data document quite carefully characteristics of people in the census year, so we know in some detail what their characteristics were after they move. However, we often do not know much about their characteristics before they moved. This makes it difficult to infer their motivations.

Although detailed population information for small jurisdictions is more costly to collect and analyze than aggregate data, it is crucial to attaining a better idea of the social and economic costs and benefits of population movements, as well as the basis for developing appropriate responses.

Research on internal migration is conducted in several Federal agencies, primarily the Bureau of the Census, the Bureau of Economic Analysis, and the Economic Development Administration, all located in the Department of Commerce. The Economic Development Administration has been the most active in supporting outside research on this topic. The Departments of Agriculture, Transportation, and Labor have also done some work on population movements.

The Committee did not have the time to investigate thoroughly the efforts of the various Federal agencies in this regard. However, preliminary analysis indicates that there is clearly room for improvement. In his testimony, Dr. William Alonso commented that:

... neither in its internal operations nor in its support of outside work has the Federal Government provided for comprehensive and sustained work in the structure and dynamics of the geography of population.

IV. PLANNING FOR POPULATION CHANGE AND ITS CONSEQUENCES

Planning for population change and its consequences can take a variety of forms. Basically, population policies can be divided into two groups: policies which *respond* to changes in population size and distribution and policies which *affect* population size and distribution.

In the first case, the approach to planning is to anticipate population change and develop policies that will accommodate that change. Changes in the size, age composition, or geographic distribution of the population can, and often do, have profound effects on Federal policies relating to health, education, environmental quality, retirement, and the economy. For example, programs that serve particular age groups, such as education and Social Security, are affected directly by the shifting age structure of the population. Federal programs that distribute resources on a geographic basis, such as urban and rural development programs and revenue sharing, will be affected by migration patterns. Obviously, demographic factors should be considered in policymaking in these areas.

Policies which affect population size and distribution are of two types. First, policies may inadvertently affect population size and distribution. Examples include family planning programs, efforts to reduce mortality, and immigration laws. Policies which influence the geographic distribution of the population include the land use planning programs of the Departments of Housing and Urban Development (HUD), Interior, and Commerce, and of the Environmental Protection Agency; HUD's urban development programs and the Agriculture Department's rural development programs; and various tax incentives administered by the Department of the Treasury.

The second type of policies which affect population size and distribution are those which have a stated goal about population size and distribution. They constitute what is generally regarded as a "population policy." The United States has no explicit population policy embodying goals for the overall size, composition, and distribution of the population. Aside from the work of the 1970 President's Commis-

sion on Population Growth and the American Future, the question of intervening in the demographic process to influence the direction of change has not been a subject of serious discussion among policymakers at the Federal level. In fact, Dr. Judith Kunofsky, population specialist for the Sierra Club, expressed concern to the Select Committee that there had been too little serious discussion among policymakers about what the Nation's goals should be in terms of future population growth, adding that "the most appropriate place for that discussion would be in the Congress."

The focus of this discussion is on policies which accommodate population change and on policies which inadvertently influence population. During the Committee's hearings, a consensus emerged that the Federal Government must plan responses to population change and consider the inconsistencies in Federal programs and policies if existing policies are to be successful.

A. AT THE FEDERAL LEVEL

Programs which are sensitive to population trends can be found in every Federal department and agency. Efficient administration of Federal programs requires the ability to anticipate population change and act accordingly. The alternative is massive waste of public resources.

The key steps in a rational planning process were outlined for the Committee by Mr. Clay Wellborn, a specialist in urban affairs and planning at the Congressional Research Service:

- (1) Continual scanning of the domestic and international environment for events, trends, or circumstances that might be early signs of potential problems or opportunities;
- (2) Identifying national, agency, or program goals and priorities;
- (3) Designing alternative policies or courses of action to achieve the goals;
- (4) Assessing the short- and long-term costs and benefits of each alternative in terms of the primary objectives and in terms of likely secondary effects;
- (5) Selecting the most desirable policies and courses of action;
- (6) Implementing the policies and actions that were selected; and
- (7) Monitoring the results and evaluating progress toward the goal with alertness for unexpected impacts or other surprises.

1. CURRENT STATUS

There is little evidence that the Federal Government has been able or willing to plan for population change and its consequences in a systematic manner. In 1970 the Advisory Committee on National Growth Policy Processes to the National Commission on Supplies and Shortages assessed the Federal long-range planning capacity and concluded that the Government had not acted to accommodate the long run changes occurring in our society. The President's Commission on Population Growth and the American Future, whose membership included Representative James H. Scheuer and Representative John N. Erlenborn, reached a similar conclusion in 1972.

Examples of non-planning abound. The Advisory Committee on National Growth Processes noted the pitifully belated effort of the Federal Government to develop programs to ease the entry of the "baby boom" generation into the Nation's schools. Likewise, the Federal Government failed to cut back teacher training programs and other programs with the onset of the "baby bust." The Select Committee examined this issue during its hearings and found that, although many local areas are now developing imaginative approaches for adapting empty school facilities for other community uses and the Office of Education is now sponsoring retraining programs for teachers, these programs are once again a response to a crisis situation. Some of these crises in education could have been avoided had some effort to exercise foresight been incorporated into the planning process since the 1950s.

Mr. Robert Parke, director of the Social Science Research Council's Center for Coordination of Research on Social Indicators, cited a more recent case where policy analysis failed to include demographic analysis. A Congressional Budget Office report concluded that college costs per student have declined as a proportion of family income, because family incomes have risen faster than college education costs. Mr. Parke noted that, although costs per student have declined as a proportion of family income, costs per family have risen. Mr. Parke pointed out that one of the "under-appreciated features of the baby boom" is that intervals between births were reduced. Consequently, these families now are more likely to have more than one child in college at the same time, and the relative financial burden upon parents of college age children has increased. In the 1980s, when the last of the "baby boom" generation graduate from college, demands on family income will be reduced. Hence the proposed tuition tax credits are responses to a temporary situation, according to Mr. Parke.

Why has the Federal Government failed to plan for population change? Dr. Peter Morrison of the Rand Corporation suggested that there are two sides to this question—one technical, the other essentially political. Planning requires both a data base on which to plan and a commitment on the part of policymakers to planning. Dr. Morrison added that the data base is not a major problem, but the "political or institutional" question may be very difficult to overcome.

Mr. Richard Engels, Assistant Division Chief for Estimates and Projections at the Bureau of the Census, expanded on Dr. Morrison's point:

It is true that many current dislocations due to inadequate planning for population change could have been avoided had there been more public recognition of the results of past population projections. Population projections receive far less public attention than do economic forecasts. In part, this may be due to the long-range nature of population projections compared to the more immediate impact of economic forecasts. Yet the very long-range nature of population projections provides for the time to make adequate planning for forthcoming trends feasible.

Absence of long-range planning is not limited to population change. The report of the Advisory Committee on National Growth Policy

Processes considered a broad range of planning issues and concluded that the failure to plan is a result of a lack of "mechanisms requiring an integrated policy-making approach."

2. DATA AND RESEARCH ISSUES

It is obvious to all that an adequate data base is essential to effective policy development and analysis. More than 100 Federal agencies are engaged in statistical activities, the major agency providing demographic data being the Bureau of the Census located within the Department of Commerce. The Census Bureau is responsible for conducting the Decennial Census of Population—and starting in 1985, the mid-decade census—upon which most population estimates and projections are based. After every census, reports are prepared on a large number of demographic characteristics for the Nation as well as for individual regions, States, counties, metropolitan areas, and nonmetropolitan areas.

The Census Bureau also conducts a monthly Current Population Survey (CPS) from which it prepares periodic reports on national population characteristics including marital status, unemployment, school enrollment, fertility, voter registration, geographic residence, mobility, numbers and characteristics of households and families, and education. Intercensal estimates of the population for the Nation and the individual States are also prepared by the Census Bureau. County estimates are prepared through the Federal-State Cooperative Program for Local Population Estimates.

The National Center for Health Statistics (NCHS) is responsible for compiling the Nation's "vital statistics," that is, information on births, deaths, and marriages and divorces, which it collects from the States. In addition, other departments of the Federal Government conduct special surveys and research when answers to specific questions are unavailable from the regular data collection systems. Many of these surveys are conducted through grant and contract procedures or are actually performed by the Census Bureau.

Despite the abundance of statistical information at the Federal level, a number of inadequacies were brought to the attention of the Committee. Many of these problems are a result of the decentralized nature of the Federal statistical system.

First, there is the problem of coordinating the 100 agencies engaged in statistical work. Over the years, effective oversight has been lacking. Mr. Parke commented on this problem:

The acts which established the former review authority and statistical coordinating authority were passed in 1942 and 1950, and in the period since then we have had an explosion of statistical and research activity both in the Federal government and by contract by the Federal government with outside organizations.

That same period has seen a considerable diminution of staff devoted to the maintenance of standards, to the encouragement of professionalism, to the updating of concepts and procedures, to the utilization of statistical and technical innovation. . . .

Improved coordination would enable all Federal agencies, as well as private organizations and individuals who rely on Federal statistics, to have access more readily to data produced by other agencies.

Under the current system, interagency exchange of data is inadequate although many major issues on which the Federal government must develop policy cut across the activities of the individual agencies and therefore statistics which also cross policy areas are required. Improved coordination would enable the Government to harness all of its data activities for problem solving and to avoid unnecessary duplication.

Furthermore, a significant amount of the data produced is not relevant to policymaking. Research is often isolated from policy-related questions. Commenting on this problem, Mr. Vincent Barabba, a former Director of the Census Bureau, stated:

... there is considerable information available. However there exists no mechanism, to my knowledge, that brings the equally important areas of developing policy analysis together with the agencies that gather information. Additionally, there is no policy-oriented mechanism available to help establish priorities relative to the collection of information—particularly with a forward look.

Mr. Parke suggested that the Federal Government needs more effective methods of measuring change in such areas as employment, households, poverty, and marital status. On this issue he stated:

In neither our research nor our statistics have we taken seriously what it means to study change. We need consistent definitions and procedures, consistently applied. We need calibration of new measures on old. And, to relate changes detected in one source to changes observed in another, we need far more consistency between surveys than we have.

Dr. Soldo made a similar recommendation with respect to the need for longitudinal studies of aging.

Mr. Parke proposed that the Federal Government fund population-related research projects on a long-term rather than a short-term basis. He stated:

We are dealing with long-term demographic, social, and economic processes that need long-term measurement and analysis if they are to be understood. Some important part of that research will get done only if there is a long-term commitment of funds to it, by contrast with the short terms provided by current granting and contracting policy. Provisions for periodic review provide ample protection of the government's interest: commitments can be withdrawn for nonperformance. I believe the government's interest in understanding the consequences of demographic change, as well as its interest in prudent expenditure of funds, would be well served by an increased emphasis on long-term funding subject to review.

Finally, the increased role of the Government and its consequent need for information raise the issues of confidentiality or the individual's right to privacy when greater access to data is considered and of the burden on individuals to respond to various questionnaires. The Census Bureau, for example, has access to Internal Revenue Service

records through an exemption in the Privacy Act that is justified by the Bureau's need to develop data on net migration between censuses to estimate population for regional, State, and local areas. The exemption was granted because the data are used in aggregate form, and the Census Bureau does not examine individual records. In this case, obviously, confidentiality has not been breached.

Commenting on the use of administrative records, Dr. William Serow, research director of the Population Studies Center, Tayloe Murphy Institute of the University of Virginia, stated:

The care taken thus far by agencies utilizing these administrative records for demographic purposes has been extraordinary in terms of protecting confidentiality. From a demographic perspective it is the actions and behavior of groups of individuals that are of interest, certainly not the tracking of the behavior of any identifiable persons. While there may well be conflicts with the right to privacy in some areas, such as credit investigation, my feeling is that there is no such conflict for purposes of demographic analysis.

Nevertheless, despite the precautions taken to protect the individual's right to privacy in such cases, some are concerned about possible reaction against the use of administrative records and survey research in developing statistical information.

A related issue is the increasing demands made by the Government to private citizens to respond to questionnaires. The tendency has been for the Government to request more and more information from individuals with insufficient attention given to refining and limiting questionnaires to necessary information. As this respondent burden has increased, the rate of response has been adversely affected. Mr. Barabba, in particular, stressed that Congress must reconcile its need for more data with the right of citizens to privacy:

I think that as society becomes more complex these two issues will join. It is going to be very difficult for those who are asked to provide information to you so that you can perform your mission of better dealing with the problems of society. At the same time you will face your constituents who have asked you to "keep these very same people away from them as well as all of the impertinent private questions they are asking."

Last year, a Cabinet-level Statistical Policy Coordination Committee, chaired by the Secretary of Commerce, was established by executive order to consider questions of duplication and conflict among federally produced statistics. In another move, under Reorganization Plan No. 1, the President shifted responsibility for oversight of Federal statistical activities from the Office of Management and Budget (OMB) to the Secretary of Commerce.

Subsequently, an Office of Federal Statistical Policy and Standards (OFSPS) was created under the Chief Economist at the Department of Commerce, parallel on the organizational chart with the Census Bureau and the Bureau of Economic Analysis. OFSPS has the responsibility for reviewing the data collection activities of such agen-

cies as the Bureau of Census, the Bureau of Economic Analysis (BEA), the National Center for Health Statistics, the Bureau of Labor Statistics, and the National Center for Education Statistics.

Mr. Manuel D. Plotkin, Director of the Bureau of the Census, outlined for the Committee the major functions of the Office:

The Office of Federal Statistical Policy and Standards will be responsible for assuring the integrity, accuracy and timeliness of Federal statistics. As indicated by its title, the Office will be concerned with the development and coordination of statistical policy and the implementation of statistical standards and guidelines. The statistical policy function includes the determination of present and future statistical requirements; the establishment of methodologies and the definition of concepts to satisfy statistical needs; an examination of the feasibility of alternative methodological approaches; a scrupulous prioritization of priorities to balance needs and demands; and the coordination, implementation, and evaluation of plans.

Because of its recent creation, it is difficult to evaluate the performance of the Office of Federal Statistical Policy and Standards. However, witnesses heard by the Select Committee disagreed on the potential of the new Office to exercise its oversight function. Mr. Parke contended that there was little to suggest that the new Office will be any more aggressive than its predecessor at OMB in pursuing its oversight responsibilities. In particular, he suggested that it will be difficult for an office located within the business-oriented Department of Commerce to exercise oversight over the Department of Labor which has a quite different constituency. On the other hand, witnesses from the Census Bureau argued to the contrary, saying there is no evidence to suggest that the Office will be "shy" in exercising its oversight authority, particularly over BEA and the Census Bureau.

In addition, President Carter has established a Reorganization Project on the Federal Statistical System at the OMB which is concerned with developing the capacity to coordinate the statistical system and to provide an overall plan for the system. Mr. Barabba, an advisor to the Reorganization Project, outlined its objectives for the Select Committee:

The primary objective of the President's Reorganization Project is to design a means for strengthening the decentralized system of Federal statistical agencies with additional capability for the coordination and management of relevant functions and the provision of selective overall policy direction.

He added that the Reorganization Project will not alter the basically decentralized system, though some realignment and consolidation of certain statistical activities may be proposed. He noted that coordination from one central place would not be effective unless each level, from the Executive Office of the President down to the line agency, had the capacity to coordinate and manage its own statistical activities.

There was general agreement among those who were familiar with the Reorganization Project that it has great potential for improving the operation of the statistical system. Mr. Barabba stated:

The Reorganization should result in better integration and coordination of Federal data collection analysis and decision making, including demographic data and policy formation. The approach of the Project is one which views statistical coordination and planning within the context of the organization and design of the decision process itself and the institutional structure of information on which decisionmakers depend.

Mr. Parke, likewise, expressed confidence in the competence and dedication of the Reorganization staff, particularly its director, Dr. James T. Bonnen:

The head of that unit is acutely aware that, as with population, most of the emerging policy problems requiring statistics cross policy areas. He sees his problem as designing an institution within the government that will provide a "place to stand" for those who see the need for connecting disparate statistical activities, so that the statistical resources of government may be brought to bear on policy questions that transcend the interests of individual departments. He deserves your support.

Mr. Parke further suggested that one of the most effective ways of bringing about coordination is to facilitate communication among the various producers of Federal statistics. He proposed that annual conferences, possibly sponsored by the Center for Population Research of the National Institute of Child Health and Human Development, be convened to allow the various producers of population statistics to exchange ideas.

3. POPULATION PROJECTIONS

Population projections are essential tools for Federal policymakers who are planning for the future needs of the entire population, the future needs of various groups within the population, and the future location of demand for services. Projections allow policymakers to assess current policies in the light of expected future needs so that adjustments in programs and policies can be made in advance to ensure achievement of social goals.

A population projection is an extrapolation—based on explicit assumptions about fertility, mortality, and migration—of what the population size and growth rate of a particular geographic area will be at some time in the future. Projections can be made not only of the total population, but also of various groups within the population. Projections differ from estimates in that they are statements about the future, while estimates present a picture of current or past population in years when no census was taken.

The Census Bureau prepares projections of the total population of the Nation every two years and projections of the total population of each of the fifty States less frequently. The Bureau of Economic Analysis (BEA), also within the Department of Commerce, publishes economic projections which provide information on population for the fifty States.

Many agencies of the Federal government use population projections prepared by the Census Bureau. Mr. Plotkin gave the Committee some examples of how census projections are used:

Specifically, our projections of long-range demographic trends are the basis of the projections of the labor force by the Bureau of Labor Statistics. They are the basis of school enrollment by the National Center for Education Statistics, the number of annuitants by the Social Security Administration, energy consumption by the Department of Energy, just to mention a few.

With the increased use of population projections, debate has grown about the reliability of these projections for planning purposes. In testimony before the Committee, witnesses from the Social Security Administration noted that in 1946 the Actuary projected the 1975 U.S. population to be between 147 and 191 million; the actual figure turned out to be 213 million. In other words, the Actuary failed to "predict" the baby boom. This and similar instances illustrate a great misunderstanding, particularly on the part of policymakers, about the function of projections.

Projections are not predictions of the future. Rather they are tools which are used to develop scenarios of events that may occur. Mr. Engels commented on the "reliability issue":

We have been somewhat paralyzed in developing projections and data on which to plan—paralyzed by the whole accuracy issue in projections: . . . it might be wiser to look upon projections and the modeling that takes place behind them as research and planning tools. This should be accompanied by a planning and projection philosophy that permits you to select population targets and build social scenarios that are desirable and work toward them with policy tools, rather than to try to use projections in some kind of a mechanical extension into the future.

The evidence suggests that efforts should be made to hone our analytical tools, particularly our methods of preparing projections, recognizing that projections are not facts about the future, but only afford an opportunity to evaluate goals in light of likely future trends and to develop new policies and adjust old policies to bring about the accomplishment of agreed goals. Mr. Parke stated:

The efforts of the policy analyst would, it seems to me, be made productive if our official statistical agencies would prepare projections that are less mechanical, more clearly grounded in current theory of demographic change, and more reflective of demographic realities. One thing we know: whatever direction the birth rate takes, it is going to bounce around. Despite the demographic record of the past 40 years, I don't believe the Census Bureau has ever projected a birth rate that bounced around; their birth rates always flatten out.

Similarly, Dr. Kunofsky suggested that, though the Census Bureau should continue to produce alternative projections based on differing assumptions, it should also consider preparing a set of projections which takes into account the 1970 Census undercount and also includes some estimates of illegal immigration. In addition, she recommended that "the Federal Government should seriously consider producing alternative projections that reflect a more goal-oriented attitude towards U.S. population growth, i.e., that exhibit alternative population paths including fertility and migration assumptions that are not now regarded as current trends."

4. INSTITUTIONAL ISSUES

In a rational planning procedure, one of the roles of the Federal departments is to assess the future national needs for Federal programs in health, education, Social Security, manpower, housing, criminal justice, defense, and so forth. Aside from the Social Security Administration and the Health Care Financing Administration, the Select Committee did not attempt to assess the analytical capabilities of individual Federal departments, a task which might warrant attention in the future.

Evidence suggests, however, that most Federal agencies have some capacity for long-range analysis, including limited demographic analysis applicable to the programs and policies of that particular agency. It should be emphasized, though, that population generally is treated as a given, unalterable variable, rather than one which can be affected by policy.

Mr. Wellborn told the Select Committee:

... although I can't speak about all agencies, I know that the ones that I have day to day contact with do have their own research and policy development activities going on.

There is a degree of population research going on in those agencies, and it is focused on the needs of the particular agency, and of course, that is to be praised. I think, I would be surprised if there was any agency that had a population-related program going on that didn't have some kind of population research underway in support of their own activities.

In general, however, the Federal planning process is weak because the analysis is narrowly focused and does not attempt to examine policies in terms of their potential impact on other national programs and policies not within an agency's jurisdiction. Mr. Wellborn suggested to the Select Committee the complexity of population planning:

Population issues, like so many public policy issues, respect neither the jurisdictional boundaries of Executive agencies nor those of Standing Committees of Congress. There are few Federal policy areas that have no impact on population distribution, and there are few Federal programs that are insulated from the effects of demographic change.

This characteristic of population change and the institutional fragmentation of the Federal Government raise interesting institutional questions about how to plan for population change and its consequences. Programs that could affect population patterns are not managed from any central point:

Domestic population change is a policy area that is the exclusive responsibility of no single agency and therefore the primary concern of none. Aside from the Office of Population Affairs (DHEW-OPA) within the Department of Health, Education, and Welfare, no agency of the Federal Government has a domestic population focus. The Select Committee's Report, *Fertility and Contraception in the United States*, contains detailed discussion of the Office of Population Affairs. The agency lacks the authority to coordinate all population-related activities of the Federal Government. Because of its location within the Public Health Service, DHEW-OPA has generally limited its concern to the health aspects of population and particularly to family planning.

The institutional arrangements of the Government inhibit comprehensive long-range planning for population change in a number of ways. First, the very nature of our system of government means that decisionmaking is widely dispersed. Under such circumstances, planning is difficult. As Mr. Kenneth Rainey, vice president of the Academy for Contemporary Problems, observed, "What actually happens out on the ground is a result, not only of what Congress does or what the President does, but also the result of millions of decisions made by State and local governments and by people acting as private citizens." However, Mr. Rainey cautioned, "It is idle to even wonder about whether this system can be changed in the United States. It is an essential part of our freer enterprise system and of our Federal system."

Second, decisionmaking occurs in a vertical pattern. Each agency and its corresponding Congressional committee generally serve a constituency whose goals are not always compatible with the goals of other agencies or with the needs of the Nation as a whole. Policy decisions are often made in isolation, despite the fact that policies and programs of an individual agency may have what Mr. Wellborn called "overlapping or spillover impact on population concerns and on the population-related programs of other agencies." Under the present system, little or no consideration is given to the impact the policy may have outside the agency's area of concern, so that a policy administered by one department may actually work against a policy goal of another department or even another goal of the same department. This vertical pattern is also visible in the policy analysis that is conducted within agencies.

For example, the Environmental Protection Agency (EPA) provides funds to State and local areas under the Clean Water Act for the construction of wastewater treatment facilities. The legislation provides for the construction of an excess capacity based on projections of future population growth. However, the actual construction of an oversized facility can have the effect of stimulating the projected population growth because the construction of new housing often depends on the availability of sewage hook-ups.

If this construction encourages population sprawl in an area suffering from excessive air pollution, the water pollution control program could have the effect of contravening Federal clean air policies by encouraging automobile travel. Ironically, the EPA administers both the clean water and the clean air programs.

It is clear from the Select Committee's hearings that the Federal Government has not planned in a consistent manner for the long-range population changes that will take place. How can we improve the capacity of the Government to conduct long-range planning for population change and its consequences?

Large new institutions and major new laws are probably not needed to incorporate a rational planning process into the Federal decision-making system. Mr. Rainey, for example, argued that most of the unexpected problems with which the Government must contend are the result of present Government policies and programs. Further, he argued against a monolithic kind of national planning "not because it is politically unacceptable (it is) but because it is not likely to work."

During the course of its hearings, the Committee received a number of recommendations for overcoming the barriers to long-range planning for population change. Testimony indicated need for more extensive demographic analysis, especially more interpretation of the data to highlight their implications for current policy issues. Suggestions for achieving this that were presented to the Committee included:

a. Biennial Population Report

All witnesses vigorously opposed the idea of a "population impact statement" similar to the environmental impact statements, but most agreed that Dr. Peter Morrison's suggestion of a biennial report on population trends and their potential impact could be helpful to policymakers. Dr. Morrison proposed that the Congressional Budget Office, or another unit with an analytical or research capacity, prepare a biennial report similar to the annual manpower report of the President, on population issues. He suggested that the annual *Population Profiles*, prepared by the Bureau of the Census, could be expanded to this end.

Mr. Engels commented on Dr. Morrison's suggestion: "A biennial report on population like the Employment and Training Report of the President would be very useful to policymakers who now, for the most part, must do their own demographic analysis of population data." Mr. Engels suggested, however, that rather than expanding the *Population Profiles*, the *Social Indicators* publication prepared by the Office of Federal Statistical Policy and Standards and the Census Bureau might be a better vehicle, being more extensive. He also expressed a concern that the *Population Profiles*, if expanded to include analysis, would of necessity be published much later and would lose the advantage of timeliness.

Mr. Engels added that the Census Bureau could undertake responsibility for preparation of the report: "I do not believe that any conflict would exist between objective data collection and analysis at the Census Bureau because the Bureau's responsibility is to collect data and not to implement or set policies." Dr. Serow agreed that a biennial report could be useful to policymakers. He stressed, however, that data collection and analysis should be separated. Should the Census Bureau be given the responsibility for the preparation of such a report, the unit conducting the analysis should be distinct from the data collection process. He added, "I don't feel that the choice of an agency is as important as the charge that is given to the agency and, secondarily, the skill mix of agency employees."

Dr. Kunofsky made a similar point. She noted that the biennial National Growth Policy Report (now the Urban Growth Report) which the President is required to submit under Title VII of the Housing and Urban Development Act, now contains information on population, though it is "inadequate, both in terms of content and interpretation." Dr. Kunofsky suggested that a population report include three types of analysis:

- information on current and future population trends, including information on age structure changes and illegal immigration, and using assumptions of fertility lower than those currently used in preparing projections;
- identification of programs and policies which will be affected by future population changes; and
- an assessment of trends with recommendations for action by the Executive Branch and Congress.

Dr. Kunofsky proposed that responsibility for preparing this report be given to a separate agency within the Executive Office of the President.

Mr. Rainey, on the other hand, argued against requiring a new report. He cautioned that such planning strategies often fall prey to the "bureaucratization of good ideas." As examples, he pointed to the experience with Environmental Impact Statements, reporting requirements of the 701 Planning Program, and the biennial National Growth Policy Report. Each was designed to build foresight into policymaking by creating an awareness of the consequences of certain policies. However, the preparation of these reports in themselves requires the creation of massive bureaucracies, and in his view production of the reports has become the goal, and policymakers have lost sight of the original intent of the reports.

In addition, Mr. Rainey noted that a past President was at one time delinquent on some thirteen reports required by law. Rather than requiring one more report, he suggested that existing reports be expanded and improved and that Congress be more vigorous in its exercise of oversight responsibilities to avoid bureaucratization. He added:

The major way to strengthen the growth report, the economic report, and the manpower report as policy analysis tools is to make sure that the bureaucracy and the president know that someone is listening and that the reports are not merely being produced to meet a legal requirement and then filed away on the shelf.

b. Population Agency

The Select Committee has concluded that, because of the existing institutional inadequacies, a separate agency with responsibility for population issues is needed. Dr. Thomas Espenshade suggested that the Congress consider establishing a population commission similar to those now found in several States. A major responsibility of such commissions—which generally include representation from academia, business, labor and other groups—is to advise policymakers of the impact of population trends on policy issues and the effect that programs may have on population change within the State.

Mr. Wellborn noted that the Balanced National Growth and Development Act of 1974, proposed by the late Senator Hubert H. Humphrey and Representative George Brown, called for the creation of an Agency for Population and Demographic Analysis located within the Department of Commerce and linked to the Census Bureau. The functions of this agency would have included analysis of population size and distribution and research on the impact of population trends on existing and proposed population policies and programs.

Basically, however, there are three alternative locations for a planning authority: a separate agency within the Executive Office of the President; a separate agency within the Office of Management and Budget; and an independent agency within the Executive Branch. Each of these alternatives was proposed during the Committee's hearings.

Dr. Kunofsky, for example, recommended the creation of a separate Office of Population Policy within the Executive Office of the President as proposed in H.R. 13223, introduced by Representatives Richard L. Ottinger and Michael J. Harrington. The function of the Office would include not only the analysis of demographic data, but also coordination of population policy. The President's Commission on Population Growth and the American Future recommended creation of a similar office in 1972.

The advantage of such an arrangement, as Mr. Wellborn noted in his testimony, is that this location offers visibility and access to the President and proximity to the regular channels of government which would allow for close scrutiny of the various departments. On the other hand, the most obvious disadvantage of this location is that the agency may become enmeshed in the day-to-day workings of the Executive Office of the President and be tempted to abandon long-range issues for short-term or politically sensitive problems.

Mr. Engels suggested that there be one central agency serving as the focal point for demographic data collection and analysis (the Census Bureau), with a separate group within OMB involved in coordination and policy analysis. He noted that, while the Census Bureau has served as the data collector for the Nation, it has shown little interest in conducting long-range analysis. He added:

The companion policy agency should do enough applied work to keep abreast of the current literature and trends, but should not undertake short-term investigative work such as that done by the Congressional Research Service and the General Accounting Office. Perhaps the best location would be in the Office of Management and Budget.

Mr. Wellborn outlined some of the advantages and disadvantages of creating a separate unit within the Office of Management and Budget (OMB). He noted that such a location would give a planning body the advantage of being closely tied to the legislative and budgetary process, providing a good vantage point for assessing programs from both a long-term and short-term perspective. However, this location would lack the visibility and access to the President characteristic of separate agencies of the Executive Office which could enhance the ability of the agency to carry out its planning and coordi-

nating responsibilities. In addition, because of the short horizon for the OMB budgetary process, the agency could be easily drawn into short-term problems at the expense of long-term policy analysis.

Dr. Serow proposed a more independent agency within the Executive Branch. He stated:

If such an agency is to be effective, it would have to be free of the sorts of pressure that would require constant putting out of short-run "brush fires." For this reason, my view of the location of such an agency would be an independent agency, perhaps a government sponsored "think tank" proximate to, but not physically in, the metropolitan Washington area.

Mr. Wellborn advised, however, that such a location has the disadvantage of being removed from the established decisionmaking process. The absence of close proximity to action could result in duplication of analytical work being carried on within other agencies and little impact on policy development.

Mr. Rainey recommended that Congress consider creating an independent National Growth and Development Commission within the Executive Branch, as proposed by the Advisory Committee on National Growth Policy Processes. The scope of this Commission would be broad, covering not only population issues but other social, economic, and environmental concerns. Mr. Rainey noted that the Commission would be responsible for examining "emerging issues of middle- to long-range growth and development and to suggest feasible alternatives for Congress, the President and the public." Such a commission would have the advantage of being isolated from short-term political pressures. It would be responsible for preparing the annual growth and development report to which the President and the Congress would be required to respond. In Mr. Rainey's view this requirement would strengthen the Commission's role in the formal decisionmaking process.

c. The Congress

In recent years, Congress has shown a concern for the need to anticipate and respond to problems of a long-range nature. Creation of the Congressional Budget Office (CBO) and the Office of Technology Assessment (OTA) plus the expansion of the Congressional Research Service (CRS) and the General Accounting Office (GAO) have strengthened congressional analytical capacity. In addition, the House Rules specifically charge standing committees with the responsibility for conducting future-oriented research on policy issues within their jurisdiction. The Joint Economic Committee, for example, is now undertaking a major interdisciplinary study of economic change.

We hope that establishment of the Select Committee on Population will improve the ability of the House to deal with long term population issues in a comprehensive fashion. Certainly, until now little attention has been given to broad population issues by most standing committees because of the continuing pressure of urgent short term legislation duties and time tables under which they must constantly function.

Problems of coordination and duplication still exist under the present committee system. Mr. Wellborn told the Committee that most proposals for improving the planning capacity of the Federal Government usually include development of a planning capability within the Congress to complement an executive planning agency. Generally, the congressional planning capability could take one of three forms: the creation of a joint committee; the creation of a new support agency to be concerned with planning issues; or the strengthening of existing analytical arms—Congressional Research Service, Office of Technology Assessment, General Accounting Office, Congressional Budget Office—of the Congress. The Commission on Population Growth and the American Future recommended, for example, the establishment of a Joint Committee on Population with oversight responsibility for population issues.

Mr. Parke suggested to the Committee that the congressional research units should develop demographic analysis, either by adding demographers to the staff or by tapping the demographic expertise of the major university population centers. Similarly, Mr. Rainey did not advocate the creation of a new unit. He stated:

All that is needed is for the Congressional leadership to demand comprehensive policy analysis on the probable consequences of legislation—on people, the economy, the environment. Committee chairmen rightfully are concerned with the narrower, advocacy aspects of the legislation they clear for the floor. . . . The Congressional leadership, therefore, plays the key role in requiring better, more comprehensive analysis of legislation reaching the floor for consideration by all members. A few years ago it would have been idle speculation to suggest that this be done. But recent congressional reforms have already given the groundwork for such action.

Mr. Rainey further recommended that Congress attempt to assess thoroughly the probable middle- to long-range effects of major legislation and more clearly state the general goals and specific intent of each piece of legislation.

d. Agency Analysis

The Select Committee recognizes that, despite possible establishment of a separate planning agency, existing agencies will need the capacity to do demographic analysis. As Mr. Engels stated:

Agencies that have a genuine need for demographic analysis are handicapped by not having their own staff to work in that area. I have watched any number of attempts to centralize research and related work in the name of efficiency, only to see a great deal of agonizing inconvenience, lack of response and timeliness, and eventually failure. Groups that have justified need for work in this area need it done well and quickly.

Mr. Parke told the Committee that demographic factors must be included in all policy analysis: "I do not think it is too much to suggest that the Council of Economic Advisors, the Congressional Budget Office, and our other principal bodies responsible for policy analysis, ensure that such questions are routinely raised by persons with strong training in demography." The Commission on Population Growth and the American Future made a comparable recommendation in 1972.

Similarly, Mr. Rainey stated that, though the creation of a central analytical unit would be useful, "the President, Congress, State and local government, and private enterprise would require a staff capacity of their own to interpret and analyze its findings." Dr. Kunofsky likewise stated:

Demographic analysis needs to be undertaken both within major policymaking agencies and within a body with coordination authority over all the former. Each federal agency needs internal demographic expertise to identify the impact of projected changes on the agency's programs and policies. Each agency should be also evaluating those changes from its own perspective and making recommendations for changes in the trends.

Dr. Serow stated, "While I find the idea of a population agency attractive, as long as it is established for an extended period, I do not think it realistic to assume that this new agency would take over the demographic activities of policymaking agencies."

e. Public Support for Planning

Public recognition of the need to plan is critical to effective planning for population change. The creation of new institutions and long-range planning authorities will not themselves ensure that such planning will have an impact on the policymaking process. Persons charged with planning responsibility must walk a delicate tightrope, on the one hand guarding against living in an ivory tower and, on the other, becoming over-bureaucratized or over-politicized.

An agency's worth often is measured in terms of what the agency can bring to the solution of immediate or politically pressing problems. Given these pressures on policymakers to ignore long-range planning, support from the public for this type of activity would be valuable. On this subject, Dr. Serow stated:

The general public's recognition of long-term problems resulting from population change is probably quite limited until the issue surfaces at the local level. Despite greatly expanded media coverage of population issues, both domestic and international, casual empiricism suggests to me that many individuals either have no recognition of long-range problems, or that their recognition is erroneous. . . . While strides in the area of population education have been made, it is this area where sustained efforts need to be focused to heighten public awareness and recognition.

Mr. Engels suggested that public support could be generated if more publicity was given to the consequences of population projections: "A set of reports or press releases by the Census Bureau on the consequences of projected trends for various institutions might be one way to bring home the importance of these population projections to the public." On the other hand, Dr. Kunofsky believes that public support exists for planning for population change and a specific national population policy. She therefore proposed that serious consideration be given to adopting a comprehensive population policy.

Finally, Mr. Rainey and Mr. Wellborn noted that a commitment to planning on the part of policymakers is essential. Mr. Rainey argued that foresight cannot be imposed; rather, he proposed that there be incentives for those who take a long-term view. Dr. Spencer made a similar point with regard to the question of management of decline:

I think we have resources that we have not tapped, maybe because our methodology of looking for solutions is so big, so grand in scale. If we could find a way to reward communities and institutions that are doing things right and make models out of them and then stimulate that kind of change in other areas, we might simplify this problem enormously. . . . I do not know how Federal policy can provide the motivation, the carrots, if you will, for institutional and behavioral change. But I do know it takes time and it takes leadership of a kind which I am not sure always emerges when you are dealing with grants. I observed early on when I was a graduate dean that too often truth is where the money is in our graduate education and research; it is not where the need is. And too often in our institutional behavior the rewards do not go to the real problem solvers; it goes to the grant getters.

Mr. Wellborn stated:

An important criterion . . . in judging the relative merits of alternative organizational approaches to planning for population change and its consequences is the degree to which a proposed institution would overcome the obstacles to good policy planning and prepare the field for the exercise of strong, informed leadership in the formulation of population policy.

B. AT STATE AND LOCAL LEVELS

The relation of the Federal Government to State and local governments has grown increasingly complex with the expansion in Federal assistance programs for State and local areas. Although decisions about growth and development are left to States and localities, the Federal Government has a powerful, if inadvertent, influence on the direction of change when it allocates funds to a particular geographic area. Accordingly, there is a need for greater Federal awareness of the factors producing local population change and its multiple effects.

In recent years, there has been a dramatic increase in the demand for demographic data on regional, State, and local areas. In part, this increased demand is a reflection of the rapid expansion of State and local governments. Between 1950 and 1970, the number of State and local employees increased 135 percent, three times as fast as the Federal civilian labor force. State and local governments rely on demographic data for a variety of planning activities, including estimates of current and future service needs for health, education, employment, and water and sewage systems.

At the same time, the Federal Government has generated a demand for demographic data on local areas because population is used as a factor in distributing funds under a number of Federal assistance programs. A 1978 Congressional Research Service report for the House

Post Office and Civil Service Committee identified 107 programs using population estimates in formulas to allocate funds. A 1975 Census Bureau survey of State and local agencies involved in preparing population estimates and projections found that a substantial number of these agencies were preparing population projections specifically to meet the requirements of Federal programs or grant applications.

Population estimates and projections for regional, State, and local areas are needed by the Federal Government for program planning purposes because circumstances and need vary greatly from one region of the country to another. For example, while declining school enrollments, vacant schools, and excess educational personnel may describe the general situation for the Nation, the situation differs in many growing areas, such as the South and West. Federal programs therefore must be sensitive to the shifting migration patterns of the population. But demographic change is extremely difficult to measure at the State and local level, and the smaller the area, the more population change depends on hard-to-predict migration patterns in and out.

1. DATA SOURCES

The Federal Government provides much of the population data on State and local areas. The Census Bureau provides counts of the total population and their characteristics (age, sex, and race) for different geographic units, based on the census taken every 10 years. Beginning in 1985, the Census of Population will be taken every 5 years.

Between census years, the Census Bureau annually estimates population size for each county or county equivalent under the Federal-State Cooperative Program for Local Population Estimates (FSCP), but makes no estimates of the changing demographic characteristics of local populations. The Census Bureau also prepares estimates every two years of the total population of counties, cities, towns, and villages which qualify for funds under the State and Local Fiscal Assistance Act of 1972. These revenue sharing estimates are based on various reporting systems and administrative records. If a local government wishes to obtain an exact count of the local population in an intercensal year, the Census Bureau will conduct a special census at the expense of the locality. In addition, the Census Bureau prepares annual estimates of the total population of the individual States.

Vital statistics data for States and local areas are tabulated by the National Center for Health Statistics (NCHS). State laws require the registration of information on births, deaths, marriages, and divorces. The data are collected at the local level by registrars who then send the records to the State, from whence they are transmitted to NCHS for compilation. NCHS data are used by various Federal agencies, State and local governments, and private groups. State and local governments also obtain statistical information from the Bureau of Labor Statistics, the Department of Agriculture, the Department of Justice, and the Social Security Administration.

In recent years, State demographic centers have emerged both to serve the needs of State planners and to check federally produced data, thus protecting each State's interest in the division of Federal resources. Most State demographic centers are located within a State

agency (often the State's planning office) or a major State university. The activities of these centers usually include: collecting data for the Census Bureau estimates of county population; preparing population projections for counties and smaller areas; and providing statistical information and technical assistance to public agencies, such as making projections of school enrollments for localities in the State.

Dr. Serow, who is research director for the official demographic center for the Commonwealth of Virginia (the Tayloe Murphy Institute) discussed with the Select Committee the role of these centers:

In my view, this work has had a considerable influence in the State, regional and local government. The Institute is frequently asked for advice on demographic matters and estimates of population produced by TMI are used by the State government to allocate funds, and by regional agencies to assess operating costs from constituent local governments.

Although not all States have demographic centers with as active a program as that of the Tayloe Murphy Institute in Virginia, these centers are playing an increasingly important role in providing data on subnational areas.

2. THE FEDERAL-STATE COOPERATIVE PROGRAM FOR LOCAL POPULATION ESTIMATES (FSCP)

With a multitude of agencies producing demographic data, there is a need for some mechanism for facilitating the collection, compilation, and dissemination of these data. In the late 1960s a Federal-State Cooperative Program for Local Population Estimates (FSCP) was established under the auspices of the Bureau of the Census to give official recognition to the demographic work being done at the State and local level. The primary purpose of the program is to promote State and Federal cooperation for the production of population estimates for counties and, since 1972, for the preparation of estimates used in the General Revenue Sharing program. Over the years, the FSCP also has tried to improve methods for the preparation of population estimates and to reduce the proliferation of estimates prepared for the same local area.

Through the FSCP the Census Bureau has established a close working relationship with 48 of the 50 States. Nevertheless, some problems persist. First, the Census Bureau continues to be frustrated by the divergence among the States in their willingness to produce population data. Mr. Engels noted, for example, that neither Texas nor Massachusetts has designated a representative to the FSCP for the past two years. Second, though the Census Bureau took the initiative in establishing the FSCP, Federal financial assistance and field personnel assistance have not been provided to the States. One problem that many States face, according to Dr. Serow, is the lack of money and staff to undertake extensive demographic analysis.

Third, the Census Bureau still prepares two separate sets of population estimates for counties—one for the FSCP program and one for General Revenue Sharing—which often differ. The FSCP estimates are prepared too late in the year to meet the General Revenue Sharing deadline and the program does not produce estimates for subcounty units.

Fourth, there continues to be undue delay between the time data are collected at the local level, processed by the Census Bureau (and also NCHS), and made available to local areas. As a result, governments may not have access to data when they would be most valuable for planning purposes.

Finally, although the FSCP has improved the reliability of estimates of the total population of counties and incorporated municipalities, it has not met all the data needs of State and local governments. For example, there are no uniform estimates of population available between censuses for smaller areas such as census tracts or internal service areas (school districts and the like), information needed by local planning agencies to determine the location of certain facilities such as schools and clinics. Although a local government can pay the Census Bureau to make an exact count of the population by a special census, the cost prohibits use of special counts for most program planning purposes. Good methods for estimating the population of small areas are not available, and research to develop better methods should be supported.

In addition, there are currently no uniform estimates for non-census years of demographic characteristics—such as age, sex, race—for States and local areas. Such estimates are needed for planning by agencies that serve the needs of particular groups in the population. The Census Bureau now prepares estimates of population by age for the States and has conducted some experiments for estimating the distribution of the State population by sex. The Bureau also produced a set of estimates of demographic characteristics for all counties for the National Cancer Institute. However, the methods of preparing these estimates require more testing for reliability before they can be adopted for general use.

Data on the size and composition of household formation that are available between censuses for local government agencies are also poor. Such data are needed by planners to determine the need for different types of housing and education. These data will soon be available for States and metropolitan areas through the Current Population Survey and the 1976 Survey of Income and Education, but they are almost nonexistent for smaller geographical units. Local areas can obtain vital statistics from local health agencies and NCHS that can be combined with information on housing unit construction to develop information on households at the local level. Unfortunately, information on housing unit construction is not available on a consistent basis for all States.

Below the national level, migration is an important determinant of population change, but data on migration between censuses are not easy to find. Each year the Census Bureau publishes estimates of geographical mobility based on the Current Population Survey. For revenue sharing purposes, migration is estimated by comparing Internal Revenue Service reports for different years. Unfortunately, because confidentiality must be observed, local governments can receive only summary data. The reliability of estimating migration using indirect methods and data is questionable.

A number of recent developments may serve to strengthen the Federal-State Cooperative Program and improve population estimates for States and local areas. The Select Committee believes these activities should be encouraged.

The Census Bureau has undertaken a review of the FSCP program over the past two years and is now preparing guidelines for its future operation. Later the Bureau hopes to develop a more formal agreement with the FSCP representatives detailing the goals of the program and the responsibilities of the constituent parties.

A subcommittee of the Interagency Committee on Statistical Methodology under the auspices of the Office of Federal Statistical Policy and Standards at the Department of Commerce has been conducting a review of all Federal-State cooperative data programs and is considering a uniform system for their administration. In particular, the subcommittee has recommended that the Census Bureau provide funds to participating agencies of the Federal-State Cooperative Program for Local Population Estimates for applied population work.

The Census Bureau is in the process of reforming the appeals process by which State and local governments can protest the estimates used in the General Revenue Sharing program. In addition, the Bureau has proposed a way for local areas to review the 1980 Census counts prior to their publication that will allow for the inclusion of data prepared at the local level.

Three research-oriented task forces of the Federal-State Cooperative Program for Local Population Estimates have been formed to look at the methods of preparing estimates of demographic characteristics for States and counties, estimates for subcounty units such as census tracts, and State estimates. A research unit has been created within the Population Division of the Census Bureau to improve the methods for producing data on demographic characteristics for States and counties.

The Census Bureau has arranged for the National Academy of Sciences to evaluate its estimates procedures and test for the accuracy of its estimates. Research is now underway on methods for estimating the population of census tracts, under the Census Bureau's Dual Independent Map and Coding File (DIME) project. Mr. Engels explained that the project would match Census Bureau data for census tracts with data collected from the administrative records of other agencies such as the Social Security Administration and the Internal Revenue Service. This project holds promise of improving the estimates for smaller geographical areas.

A number of States have undertaken innovative demographic work which could be adapted by other States to produce better population estimates. As an example, Dr. Serow told the Committee about a project initiated in Virginia last year for estimating household formation through the collection and analysis of housing unit construction data. The Virginia Housing Data Bank program will provide monthly information on the changing housing stock at the county level by type of unit and suitability for year-round occupancy.

Similarly, a number of States including Minnesota and California have begun programs for estimating migration by tracking the changes of address on driver's licenses. The major barrier to such projects seems to be financial. In commenting on the Virginia housing program, Dr. Serow stated, "It should be stressed that to operationalize such a program requires the use of scarce resources of time and money which are not available to many agencies working in this area."

The Select Committee supports these activities and believes that every effort should be made to strengthen the Federal-State Cooperative Program. In particular, the Select Committee believes that Federal financial assistance should be available to the FSCP participants for demographic work. In addition to the Census Bureau's work on estimates methodology, the research activities of the Center for Population Research at the National Institutes of Health should be expanded to include more research on the determinants of demographic change and developing sound methods for the preparation of population estimates for States and local areas.

3. ALLOCATION OF FEDERAL FUNDS

Special problems emerge when population estimates are used as the basis for allocating Federal funds to various geographic areas. Mr. Engels raised a number of these issues before the Committee. For example, the data from the most recent census rapidly become out of date, yet estimates of current State and local populations are not always satisfactory for allocating funds or they may be deficient in certain respects.

Often the background data used in preparing population estimates are themselves poor in quality. Mr. Engels stated:

In recent years, usually reliable data series have been more difficult to obtain and have contained more obvious problems of comparability than previously. Unless checked, this may result in abandonment or rather serious revisions in current estimation techniques. Otherwise, both the estimates and the programs upon which they are based may suffer from a lack of timeliness, and significant and inappropriate shifts in pattern may occur.

The Census Bureau is now working with the FSCP agencies and the original data sources to improve the timing and quality of the data.

The use of estimates and projections to set population thresholds for eligibility for program funds often creates problems for those communities which are showing either a decline or growth in population. These communities, Mr. Engels noted, might "hover around the threshold level, cycling just above or below the critical level in successive years." He added, "Clearly, the unconditional use of population figures is hazardous in such cases."

The lack of adequate data on illegal aliens presents problems for local areas when funding is based on population, for example in the General Revenue Sharing program. Though a community may have a relatively large illegal community, the lack of data on this group means that they are not included in the population estimates used for revenue sharing purposes.

In March 1978, the Office of Federal Statistical Policy and Standards issued a policy paper on the use of statistics in Federal funding formulas. The report, prepared by a Subcommittee of the Federal Committee on Statistical Methodology, recommends useful guidelines for policymakers in developing funding formulas using population and income data. The report recommends defining program goals more

clearly; improving communication between program designers and the statistical community to increase awareness of data problems; expanding research on formula design; allowing for more flexibility in choosing alternative data in some circumstances; and relaxing eligibility cutoffs to allow for errors in the data. The Select Committee supports these recommendations, but testimony received by the Select Committee suggests that the Federal Government must give more emphasis to research on methods to improve the timeliness and reliability of the basic population data used in funding formulas.

4. THE MID-DECADE CENSUS

The problems of the availability of timely, reliable, and uniform data on State and local areas will be eased somewhat by introduction of the mid-decade census in 1985. There is an abundance of data available from the Decennial Census, but these data rapidly grow stale. The mid-decade census will most likely be more limited in scope than the Decennial Census. The current plan is to provide a complete count of the population including information on age, sex, race, and household size.

Under this plan more timely information would be available for planning needs of State and local governments and for Federal grant programs. The availability of these data would also mean that the various estimates and projections would be based on more current data and that the method used for preparing the estimates and projections could be tested more frequently.

The final form of the mid-decade census has not been decided. Mr. Engels provided a word of caution for the Select Committee:

However, if a large scale sample survey is conducted in lieu of a complete enumeration, the data for small areas will not be as precise and reliable and may, in fact, be virtually useless for smaller area applications. This should be an important consideration since approximately 50 percent of all incorporated places in the United States are cities of less than 1,000 people, but are nevertheless in need of current demographic data.

5. PROJECTIONS OF STATE AND LOCAL POPULATIONS

During the 1970s there was an increase in Federal legislative and administrative requirements for the use of population projections of States and local areas. As Mr. Engels stated, "The use of projections has been altered from a casual exercise in background information to planning applications, and more recently to a central position in the qualification for funding by Federal projects."

For example, the Environmental Protection Agency allocates funds under section 201 of the Clean Water Act for construction of wastewater treatment facilities on the basis of projected population for an area for the year 2000. Similarly, the Employment and Training Administration relies on population projections for its manpower planning program for CETA areas.

The Department of Health, Education, and Welfare uses population projections in the administration of the Hill-Burton program for

hospital construction, and the 1974 State and area health planning and resources legislation requires the use of projections in planning by local health agencies. The Department of Energy is preparing population projections to measure energy demands at the county and State levels. In addition, the Federal Government has encouraged the development of population projections at the local level under the Housing and Urban Development 701 planning program and has continued this support under the Housing and Community Development Act of 1974.

The growth in Federal requirements for the use of population projections has not been accompanied by standardized methods for the preparation of projections nor clear guidelines for the use or application of projections. In commenting on this issue, Dr. Serow told the Committee:

In contrast to what might be a superfluity of current population estimates at the county level there do not presently exist uniform and reliable projections for counties or county equivalents. Yet, to an increasing extent funding for programs such as water and sewer installation depends not on estimates of current population but on projections of future population. All or nearly all States produce at least one set of projections at the county level, but methodology varies so widely from State to State that comparison and evaluation are impossible. Attempts to link these to national level projections of population or to uniform projections at the State level are severely hampered by the existence of overlapping and conflicting State level projections produced by different Federal (and private) agencies.

The Census Bureau prepares projections of the total population of each of the fifty States but these are not made frequently or regularly. To facilitate planning for the future, the Bureau of Economic Analysis (BEA) at the Department of Commerce published in 1974 the "Area Economic Projections 1990" which projects population, employment, personal income, and earnings by industry for the 173 BEA economic areas. Also, with the Economic Research Service of the Department of Agriculture, BEA prepares the "OBERS* Projections of Regional Economic Activity" on a regular basis. This provides a different projection of population and other indicators for subnational areas through the year 2020. This set of projections is revised every 5 years, most recently in 1974. Projections of State populations were recently updated for use by the Environmental Protection Agency.

The discrepancy among federally produced State projections results from the application of different methodologies. The Census Bureau, for example, uses a cohort-component or demographic method for producing State projections while the Bureau of Economic Analysis uses an econometric method. The Census Bureau's method produces information on demographic characteristics (age, sex, race) which is useful in projecting demand for certain educational or health programs affected by age factors; the BEA-produced projections do not provide this information.

*OBERS—Office of Business Economics Research Service.

Commenting on the divergent projections, Mr. Plotkin said:

While the existence of multiple sets of population projections is useful for planning for different alternative courses of action, the Department of Commerce recognizes that the mandated use of conflicting projections for planning or funding purposes is not a satisfactory situation. Moreover, the technical accuracy of State projections might well be improved by an interactive demographic-economic system which provides the best aspects of the two systems.

Many projections for substate populations are subdivided State projections. Mr. Engels expressed concern about the ability of most States to apply Statewide projections to local areas. He stated, "... although there are a few States that are extremely good at this kind of thing, in large part most are unable to do an adequate job."

From the local perspective, proliferation in the use of projections has posed a number of problems. Local officials must often choose between a number of conflicting projections to comply with Federal regulations. No projection can be "wrong" if the arithmetic is correctly done, but it is important that method of choice be linked to the use of the projection. Few projections are likely to present an accurate picture of the future population. For local officials lacking demographic training, such a situation is frustrating and confusing. Dr. Serow told the Committee:

People frequently call our office, and I imagine the offices of our colleagues in other States, and say that this agency has this number, or this agency has that number. Which is right? Especially when you are talking about a number that alleges to be the population of the jurisdiction for the year 2000, the best you can say is, "I haven't the faintest idea."

Because of the required use of different projections to qualify for various programs administered by different Federal agencies, a local government may find that it qualifies for funding under one program using one projection, but does not meet the requirements of another. If there is a lack of agreement on which projection to use, rational planning becomes difficult. At other times, local public officials abdicate their responsibility, as Dr. Kunofsky noted: "In many cases, these projections are developed without much public participation and sometimes without any participation of political decisionmakers whatsoever."

The absence of reliable and uniform population projections for local areas also creates problems for the Federal Government. Dr. Kunofsky recounted for the Select Committee a number of case studies involving the EPA 201 Program which illustrate these problems. The San Francisco Bay Area, the Denver area, and the Atlanta area each had different sets of regional projections. In the case of both San Francisco and Denver, the regional projection for the year 2000 was smaller than the total of the projections made for each of the constituent municipalities. For example, the Denver regional projection for the year 2000 is 2.35 million, while the total of the projections for the 37 municipalities in the region is 2.7 million. In Atlanta, the projections prepared by the State of Georgia for the Atlanta region were

significantly lower than those prepared by the Atlanta Regional Council (A.R.C.). The State projected a population of 2.4 million for the year 2000, while the A.R.C. projected a population of 3.5 million.

All too often, officials seek projections which yield the greatest Federal funds. As an illustration, Dr. Kunofsky recounted the following story:

Someone from a rural part of Denver told me that there were two projections for his region: one showed a moderately decreasing population; the other showed a tripling of population within 20 years. He asked me which one he should use. I suggested that I had no idea but perhaps he should use the one that got him the greatest Federal contribution.

Such circumstances raise the question of the level of funding and growth the Federal Government should be willing to support.

A decision to use one projection instead of another can have a powerful effect on the growth and development of an area, especially when the projection is being used to measure the need for a large capital project such as a hospital, a water or sewage facility, a highway, a dam, or an energy production facility. Population projections, in such circumstances, tend to become self-fulfilling prophesies. If a community builds a major project such as a water treatment facility on the basis of an inflated projection, the building of that facility may have the effect of attracting migration to the area and thereby assuring the projected population growth.

Because Federal programs can have an unintentional impact on population change at the local level, efforts are needed to promote coordination among conflicting Federal policies and programs and to establish uniform procedures for the use of projections in distributing Federal grant monies. Dr. Kunofsky summarized for the Committee the major issues relating to the use of projections in the allocation of Federal funds:

1. Government money may be wasted if the Federal contribution to an area is really in excess of that warranted by reasonable needs, and more pressing problems in other areas may go untended.
2. A community may be burdened with undue financial obligations for repaying bonded indebtedness or operation and maintenance costs if the projected growth is *not* forthcoming.
3. Growth may be induced by one Federal program in a way that is inconsistent with or actually undermines the achievement of the objectives of other Federal programs.
4. Growth may be unfairly induced in some regions to the detriment of other regions.
5. One community may be receiving funds from a variety of Federal and State agencies based on very different population projections.

The chances that these problems will emerge again and again are excellent. As Mr. Engels noted, "The types of horror stories that Dr. Kunofsky related in a few case studies are going to be more abundant, I suspect, in the next few years."

Certain recent developments indicate that Federal agencies are becoming concerned about the proliferation of population projections. Mr. Engels suggested to the Committee that "the recent use of projec-

tions in the wastewater planning and management legislation has prompted both local and regional concern and has stimulated Federal action in establishing an adequate projections data base for both planning and current applications."

The Environmental Protection Agency (EPA) became concerned about the waste of Federal dollars resulting from communities' inflating their population projections to receive additional Federal funds under the section 201 program. In April 1978, EPA issued new interim regulations setting guidelines for the use of population projections under the construction grants program. The new regulations require the use of projections prepared by the Bureau of Economic Analysis for each of the fifty States.

Each State is to separate its projection into projections for the designated water quality planning or "208" agencies, which in turn are to separate the projections for each county, city, and sewage facility planning or "201" area within its jurisdiction. The regulations allow for slight variations from the BEA projections, 5 percent at the State level and 10 percent at the substate level. Communities wishing to construct facilities deemed larger than necessary would have to do so at their own expense. Communities may, of course, opt for a smaller projection consciously so as to brake their own growth.

Another development noted during the Select Committee's hearings is that staff discussions have begun among the various agencies using or preparing projections, particularly the Bureau of Economic Analysis, the Department of Energy, the Census Bureau, and the Employment and Training Administration. The staffs of BEA and the Census Bureau have been exchanging ideas regarding the merger of the econometric and the demographic methods of preparing projections. The contact has been informal, but it does indicate some agency concern.

The Office of Federal Statistical Policy and Standards at the Department of Commerce, which has responsibility for coordinating the work of the various statistical agencies, is concerned about the discrepancy among federally produced projections for State and local areas and their use in the allocation of Federal funds. The issue has also been raised by the Federal Committee on Statistical Methodology and the Statistical Policy Coordination Committee which is now undertaking a study of federally produced State projections.

A 1977 conference sponsored by the American Statistical Association and the National Academy of Sciences, in which the Census Bureau participated, recommended that efforts be made to develop a methodology which would combine the econometric and the demographic methods for making projections of population patterns. As a result of this conference, the National Science Foundation is considering funding a "visiting scholar" to the Census Bureau to do research in this area.

A special task force on projections of the Federal-State Cooperative Program for Local Population Estimates (FSCP) met in April 1978 with representatives of the Census Bureau and the Bureau of Economic Analysis, the major Federal producers of State projections. The participants expressed interest in setting up a more formal Federal-State cooperative program on population projections. The chair-

man of the task force was asked to contact each of the fifty States to determine interest. Mr. Engels was especially hopeful that such a co-operative program would match the success of the one dealing with population estimates.

Aside from the technical considerations surrounding the projections issues (that is, standardization of methods and application), a more subjective issue, the "philosophy of projections," was raised during the Committee hearings. This issue was discussed in the previous section of this report on planning at the Federal level; however, it applies equally to the situation at the State and local levels.

Mr. Engels suggested to the Committee that a new "philosophy of projections" is needed. Rather than being obsessed with the issue of accuracy, planners should use projections not simply as a tool for planning for expected events, but also as a tool to assess the desirability of future trends and take remedial action to affect the outcome of events. On this point, Mr. Engels stated:

Social and economic planning has progressed to a point at which integrated demographic and economic modeling should be viewed and applied as a planning tool for setting target public policies and expenditures rather than as a means permitting unconditional statements.

Dr. Kunofsky presented a similar argument, suggesting that rather than funding programs solely on the basis of current trends that may contravene other established societal goals, governments must take established goals, both national and local, into consideration in preparing and applying projections.

What policy should the Federal Government adopt with regard to regional, State, and local projections and their use in Federal funding? Dr. Kunofsky recommended that the Government establish certain guidelines for the preparation and use of projections in Federal funding formulas. She suggested the following:

- projections must be based on demographically sound methodologies;
- projections should be regularly updated;
- the total of all State projections and all projections for local areas should be consistent with a projection of the total population for the Nation as a whole;
- input from State and local governments and the public should be encouraged; and
- goals, as well as current trends, should be taken into consideration in the preparation of projections.

Dr. Kunofsky suggested that the regulations promulgated by the Environmental Protection Agency meet most of these standards.

In addition, she stressed that the Federal Government should not support growth and development in an area unless that growth is consistent with other national policies. Finally, Dr. Kunofsky proposed that an interagency committee be established to review and coordinate the use of projections by Federal agencies and that a permanent body be set up to integrate national goals into the preparation and use of projections.

Dr. Serow recommended that the Congress continue to support the Census Bureau's projections program, but that more emphasis be given to eliminating duplication in the production of State-level projections. In addition, he suggested that the FSCP representatives be supported in their research efforts to improve the methodologies for developing projections. Dr. Serow added, "An ideal vehicle for this effort might be the emerging FSCP program in county level projection procedures."

He followed this with a recommendation that more effort be devoted to the development of an economic-demographic interaction model and that more attention be devoted to improving the methods for preparing projections of smaller areas, such as Census tracts, and projections of demographic characteristics. Finally, he recommended that the demographic research activities of the Center for Population Research be supported, noting that a better understanding of demographic behavior would enhance the ability to prepare projections.

APPENDIX

WITNESSES TESTIFYING BEFORE THE SELECT COMMITTEE ON POPULATION WITH RESPECT TO MATTERS IN THIS REPORT

Dr. William Alonso, Director, Center for Population Studies, Harvard University.
Mrs. Eileen Anderson, Director, Department of Finance, State of Hawaii.
Dr. Joseph Anderson, Assistant Professor of Economics, Williams College.
Dr. Roy Bahl, Director, Metropolitan Studies Program, The Maxwell School,
Syracuse University.
Mr. Vincent Barabba, Vice President for Marketing, Xerox Corporation.
Mr. Francisco Bayo, Deputy Chief Actuary, Social Security Administration.
Dr. Mary Berry, Assistant Secretary for Education, Department of Health,
Education, and Welfare.
Dr. David Birch, Director, Program on Neighborhood and Regional Change,
Massachusetts Institute of Technology.
Dr. Jacob Brody, Associate Director, Epidemiology, Demography and Biometry,
National Institute on Aging.
Mr. Herman Brotman, Consulting Gerontologist.
Dr. Robert Butler, Director, National Institute on Aging.
Dr. Robert Clark, Assistant Professor of Economics and Business, North Carolina
State University.
Dr. Donald Cowgill, Professor of Sociology, University of Missouri.
Dr. Joseph Cronin, Superintendent of Education, Illinois Office of Education.
Dr. Julie DuVanzo, Associate Economist, Rand Corporation.
Robert deMarcellus, Col. FA FARNG.
Mr. Robert A. Derzon, Administrator, Health Care Financing Administration.
Dr. Anthony Downs, Senior Fellow, Brookings Institution.
Mrs. Katherine Elsenberger, Department of Education, Hunter College.
Mr. Richard Engels, Assistant Chief, Population Division, Bureau of the Census.
Dr. Thomas Espenshade, Associate Professor of Economics, Florida State
University.
Dr. Harriet Fishlow, Office of Academic Affairs, University of California,
Berkeley.
Dr. Richard Freeman, Professor of Economics, Harvard University.
Dr. Paul Glick, Senior Demographer, Bureau of the Census.
Dr. Tamara K. Hareven, Professor of History, Clark University.
Dr. Sandra Hofferth, Research Associate, The Urban Institute.
Mr. T. Edward Hollander, Chancellor, New Jersey Department of Higher
Education.
Dr. Shella Kamerman, School of Social Work, Columbia University.
Ms. Mary Grace Kovar, Chief, Analytical Coordination Branch, National Center
for Health Statistics.
Dr. Judith Kunofsky, Population and Growth Policy Specialist, Sierra Club.
Dr. Charles Leven, Director, Institute of Urban and Regional Studies, Washing-
ton University.
Mr. Daniel Levine, Associate Director for Demographic Fields, Bureau of the
Census.
Mr. David McKusick, Supervisory Actuary, Health Care Financing Adminis-
tration.
Dr. Peter Morrison, Senior Social Scientist, Rand Corporation.
Dr. Thomas Muller, Senior Research Associate, Urban Institute.
Mr. Robert Parke, Director, Center for Coordination of Research on Social
Indicators, Social Science Research Council.
Mr. Manuel D. Plotkin, Director, Bureau of the Census.
Mr. Kenneth D. Rainey, Vice President, Academy for Contemporary Problems.
Dr. Richard Rubin, Associate Professor of Urban and Regional Planning, Flor-
ida State University.

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- Dr. Isabel Sawhill, Director, National Commission for Manpower Policy.
Dr. William Serow, Research Director, Population Studies Center, Tayloe
Murphy Institute, University of Virginia.
Mr. Jacob Siegel, Senior Demographic Statistician, Population Division, Bureau
of the Census.
Dr. Julian Simon, Professor of Economics and Business Administration, Univer-
sity of Illinois.
Mr. Elmer Smith, Assistant Commissioner of Social Security for Program Policy
and Planning, Social Security Administration.
Dr. Beth Soldo, Senior Research Associate, Center for Population Research,
Georgetown University.
Dr. Robert Spencer, President, Sangamon State University.
Dr. Luther Tweeten, Professor of Agricultural Economics, Oklahoma State
University.
Dr. Joe D. Wray, Population Studies Center, Harvard University.
Mr. Clay Wellborn, Specialist in Urban Affairs and Planning, Government
Division, Congressional Research Service, Library of Congress.
Mr. Meyer Zitter, Chief, Population Division, Bureau of the Census.

